



**NATIONAL
CONSERVATION
LANDS**

Cotoni-Coast Dairies California Coastal National Monument Proposed Resource Management Plan Amendment and Environmental Assessment



September 2020

US Department of the Interior
Bureau of Land Management



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Central Coast Field Office
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September 25, 2020

Dear Reader:

The Bureau of Land Management Central Coast Field Office is releasing this Cotoni-Coast Dairies proposed Resource Management Plan Amendment and Environmental Assessment for the California Coastal National Monument that will provide management direction for Cotoni-Coast Dairies public lands in Santa Cruz County. This announcement begins a 30-day protest period and 60-day Governor's consistency review.

The BLM recognizes the widespread damage caused by the CZU Lightning Complex Fire in Santa Cruz and San Mateo counties, which also burned portions of the Cotoni-Coast Dairies. We sympathize with our neighboring communities as they recover and rebuild. The BLM believes the management actions detailed in this proposed plan amendment will not only aid in that recovery, but strengthen future wildland fire prevention.

First, public access to outdoor recreation is integral to the way of life in Santa Cruz County and enjoying the natural scenic beauty of these public lands can help brighten our spirits and strengthen our bodies. Development of trails proposed in the plan amendment will provide new recreation opportunities for the public to enjoy the panoramic vistas and natural landscape that drew many of us to this area in the first place.

Second, the proposed plan authorizes the BLM to use a wider range of tools to address the impacts of recent wildland fires and help prevent future ones on the Cotoni-Coast Dairies property. These tools include the use of prescribed controlled burns and mechanical treatments to reduce the available fuels that feed wildland fire, as well as treatment of emergent non-native plant infestations and long-term grazing that will prevent encroachment of woody vegetation into the wildland-urban interface.

Third, the proposed amendment establishes goals and objectives for the long-term management of the property, including a phased approach for providing public access that allows the BLM to evaluate the effectiveness of our approach and make adjustments before proceeding with further development. This helps maintain the BLM's multiple use mission, while still allowing for future public involvement and engagement. More information, along with instructions for filing a protest from those who have standing, is available on the project website at:

<https://go.usa.gov/xEJAw>.

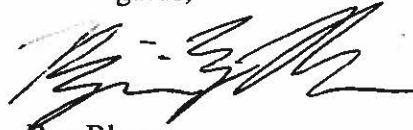
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CALIFORNIA*, NEVADA*, OREGON*

* PARTIAL

The BLM looks forward to continuing to work with our neighboring communities to finalize and implement this plan amendment, which will allow us to share Cotoni-Coast Dairies with North Coast residents and the American people.

Best regards,

A handwritten signature in black ink, appearing to read 'Ben Blom', with a stylized, cursive script.

Ben Blom
Central Coast Field Manager

1. Introduction

The Bureau of Land Management (BLM) Central Coast Field Office (CCFO) has prepared this Resource Management Plan Amendment and Environmental Assessment to analyze the effects of alternative management approaches on the Cotoni-Coast Dairies unit of the California Coastal National Monument.

The Trust for Public Lands (TPL) purchased the Coast Dairies property in 1998 with contributions provided by the California Coastal Conservancy, the David and Lucille Packard Foundation, the Save-the-Redwoods League, and other non-government entities. In August 1998, the BLM signed a memorandum of understanding with TPL to be a permanent steward of the upland portions of the property. In April 2014, TPL transferred those portions of Coast Dairies, totaling 5,843 acres, into public ownership. The mineral estate underlying the property was retained by the Coast Dairies Land Company.

On January 12, 2017, the property was added to the California Coastal National Monument by Presidential Proclamation No. 9563 and re-named Cotoni-Coast Dairies. The proclamation specifically calls for a management plan to make the area available for public access, consistent with the care and management of the objects identified. The California Coastal National Monument is managed as a component of the BLM's National Conservation Lands, which have been designated by Congress and/or the President, supporting conservation as a part of the BLM's mission.

This planning process advances the Administration's goals identified in Secretarial Order 3366, "Increasing Recreation Opportunities on Lands and Waters Managed by the U.S. Department of the Interior," Secretarial Order 3347, "Conservation Stewardship and Outdoor Recreation," and Secretarial Order 3372, "Reducing Wildfire Risks on Department of the Interior Land Through Active Management." The Bureau of Land Management's (BLM) Central Coast Field Office needs to establish land use decisions through an amendment to the California Coastal National Monument Resource Management Plan, approved in 2005. This Resource Management Plan Amendment was prepared using the BLM's planning regulations (43 Code of Federal Regulations [CFR] Part 1600) and guidance issued under the authority of the Federal Land Policy and Management Act (FLPMA) of 1976. Section 102 of the FLPMA sets forth the policy for periodically projecting the present and future use of public lands and their resources through the use of a planning process. Sections 201 and 202 of the FLPMA are the statutory authorities for land use plans prepared by the BLM. The associated Environmental Assessment is included in this document to meet the requirements of NEPA, the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR Parts 1500-1508), Department of the Interior (DOI) Implementation of the National Environmental Policy Act of 1969 Final Rule (43 CFR Part 46), and the requirements of BLM's NEPA Handbook H-1790-1 (BLM 2008) and Land Use Planning Handbook H-1601-1 (BLM, 2005), as amended by subsequent Instruction Memorandums.

1.1 Purpose and Need

The FLPMA requires the BLM to develop Resource Management Plans that provide for the use of public lands. On January 12, 2017, Presidential Proclamation 9563 added the Cotoni-Coast Dairies unit to the California Coastal National Monument. This proclamation called for the Cotoni-Coast Dairies unit to be available for public access upon the BLM's completion of a management plan.

The current Resource Management Plan for the California Coastal National Monument was completed in 2005, before the addition of onshore units. It provides management direction for approximately 20,000 offshore rocks and islands along the coast of California. While some of the general management direction in the 2005 plan is relevant to onshore units of the National Monument, the purpose of this Resource Management Plan Amendment is to establish land use decisions, management actions, and allowable uses specifically for the onshore Cotoni-Coast Dairies unit of the California Coastal National Monument. The need for the Resource Management Plan Amendment is to provide opportunities for public access and

recreation at Cotoni-Coast Dairies, while ensuring care for the objects and values identified in Presidential Proclamation 9563. These objects include traditional use areas of the indigenous people and archaeological resources, as well as a wide array of habitats and the diversity of wildlife that they support, including forests, shrublands, grasslands, riparian/wetlands, and aquatic systems. There is also a need to establish land use decisions and management actions for other BLM programs, including livestock grazing, fire and fuels, and vegetation management.

1.2 Planning Area Description

The geographic scope of the Cotoni-Coast Dairies Resource Management Plan Amendment (RMPA) comprises 5,843 acres of public land referred to hereafter as Cotoni-Coast Dairies (C-CD) — managed by the BLM as part of the California Coastal National Monument (CCNM) — in Santa Cruz County. Public land resources described in this RMPA/EA are characterized within the context of both the “*planning area*”, as well as the “*decision area*.”

The *planning area* encompasses the entire Central Coast region regardless of jurisdiction or ownership. Whereas, the *decision area* is only the 5,843 acres of BLM-administered lands within the Planning Area for which the BLM has authority and makes decisions. It is also important to note the BLM does not own minerals within the decision area, so decisions related to minerals are excluded from this planning effort (**Appendix A, Figure 1**).

The C-CD is located approximately ten miles north of the City of Santa Cruz along State Highway 1. It surrounds the small, rural, coastal community of Davenport. Prior to European contact, the Cotoni tribelet of the Costanoan People (also called the Ohlone) inhabited the area - making use of the landscape's diverse resources - for thousands of years. The landscape of C-CD is defined by a prominent series of stair-stepped marine terraces that rise from the coastline on the western edge and culminate in the steep terrain of the Santa Cruz Mountains at the eastern edge. The marine terraces are dissected by six perennial streams that flow from the Santa Cruz Mountains to the ocean. The wide, open terraces provide expansive, sweeping views of the Pacific Ocean. The steep gradient of topography and climate at C-CD produce a wide diversity of niches that support riparian zones and wetlands, grasslands, coastal scrub, oak woodlands, and conifer forest (**Appendix A, Figures 2 & 3**). These diverse habitats in turn, support numerous fish and wildlife species including coho salmon, steelhead, California red legged frogs, mule deer, and mountain lions. Additional information about the Planning Area is provided in Chapter 3, Affected Environment.

1.2.1 Relevant Plans and Amendments

The CCNM RMP (BLM 2005a), which was completed in 2005 when the CCNM consisted of rocks and islands off the California Coast, does not specifically address on-shore units.

The Coast Dairies Long-term Resource Protection and Access Plan (ESA 2004) provides general direction to land managers based on public feedback from individuals, organizations, and local, State, and Federal government agencies. This Plan was incorporated into the Proposed Resource Management Plan for the Southern Diablo Mountain Range and Central Coast of California (BLM 2006), which identified sustainable multiple use management goals and objectives for public lands administered by the BLM CCFO. These included goals and objectives for the 5,843 acres of in Santa Cruz County, California later designated as the C-CD unit of the CCNM.

The Proposed Resource Management Plan for the Southern Diablo Mountain Range and Central Coast of California recommended special area designation, lands available for livestock grazing, wind energy exclusions, a limited vehicle use area designation, visual resources classification, fire management, and

lands and realty actions. However, at the time of the BLM's 2007 Record of Decision the property was not in public ownership yet. Therefore, the Record of Decision did not include any decisions related to C-CD.

Following the transfer of the property into public ownership, BLM approved the Coast Dairies Interim Management Plan on June 4, 2014. The interim management plan provides an interim strategy for access and other land uses that can be implemented to protect natural, cultural, and social resource attributes. The Interim Plan included decisions authorizing two access points and two day-use hiking trails on the property. However, the BLM delayed implementing these actions until a more comprehensive plan could be completed for C-CD that addresses public concerns related to traffic and public health and safety. Decisions made in the interim management plan are incorporated into Alternative A (No Action) of this RMPA.

1.2.2 Grant Deed Language

Prior to the transfer of Coast Dairies to the BLM, the BLM agreed that the property would be managed for open space and public recreation in a manner consistent with the protection and preservation of natural resources, restoration of endangered species and their associated natural habitats, adjacent sustainable agricultural uses, and valid existing rights codified in the following "Upland Parcels Deed Restrictions":

- (a) Public recreational access, open space, and grazing priority. The Upland Deed Restricted Parcels shall be protected, used, and managed only for open space, grazing, and public recreational access uses and development in a manner consistent with the protection and preservation of coastal resources. Reclamation and restoration activities that support and facilitate such open space, grazing, and public recreational uses and development (including by allowing areas to be so used and developed in these ways) are allowed. Grazing activities shall be sited, designed, maintained, managed, and operated so as to be coordinated with, and so as to not significantly adversely affect, open space and public recreational access uses and development on the Upland Deed Restricted Parcels.
- (b) Timber operations prohibited. Commercial timber operations (as defined in California Public Resources Code 4527) shall be prohibited on the Upland Deed Restricted Parcels. In addition, removal of redwood trees shall be prohibited on the Upland Deed Restricted Parcels, except to the extent determined to be necessary or desirable for public safety and/or forest health, subject to all applicable authorizations.
- (c) Motorized off-road vehicles prohibited. Motorized off-road vehicles shall be prohibited on the Upland Deed Restricted Parcels except to the extent required for property management, (including reclamation/restoration), public health and safety protection, or emergency response, and provided such vehicular use is confined to established and designated roadways as much as possible (i.e., such use outside of such roadways shall be limited to areas that cannot be accessed in any other way).

1.3 Scoping/Issues

Scoping is the term used in the CEQ regulations implementing NEPA (40 CFR 1500 et seq.) to define the early and open process for determining the scope of issues to be addressed in the planning process. The formal public scoping period for the RMPA/EIS began on June 24, 2019, with the publication of a Notice of Intent (NOI) in the Federal Register and ended on August 2, 2019. Two public scoping meetings were held in July 2019 in Santa Cruz, and Davenport, California. The BLM reviewed and categorized the public scoping letters and used the planning issues raised in the scoping comments to help guide the development of the range of alternative management strategies for the RMPA. For a detailed description of the scoping process and the public outreach efforts, please refer to the Scoping Report (BLM 2019).

1.3.1 Issues Addressed

The BLM grouped the issues identified during scoping into comments pertaining to specific resource areas, comments pertaining to alternatives, and general comments that were not resource-specific. The issues identified as being within the scope of the RMPA/EA are included in the Scoping Report (BLM 2019).

The BLM has determined the existing RMP decisions remain appropriate for the offshore rocks and islands, but new decisions are required for the management of the lands added to the CCNM since 2005. The C-CD RMPA/EA would update the CCNM RMP (BLM 2005a) management direction for this on-shore unit [only] to make it consistent with current laws and regulations, and provide BLM with a plan to provide public access on C-CD, while caring for and managing the Monument values listed in Proclamation 9563. The C-CD RMPA/EA does not consider management actions for other on-shore units, nor the rocks and islands that were previously addressed in the CCNM RMP.

The BLM's goal is to have a cohesive set of land use plan decisions for the decision area that includes the following: (1) opportunities for public access and recreation on C-CD, (2) goals and objectives consistent with the care and management of the Monument's objects and values, (3) livestock grazing, fire and fuels, vegetation management, other relevant BLM programs, and (4) measures to address public concerns, particularly those related to public health and safety.

CZU Lightning Complex Fire

The CZU Lightning Complex resulted in an unprecedented level of destroyed and damaged structures within unincorporated Santa Cruz County. Preliminary evaluations estimate \$310 million in damage to private structures and \$30 million in losses to public infrastructure. The total burned area is 86,509 acres and full containment of the fire is expected on September 28, 2020. The burned areas include 1,052 acres in the Molino, Agua Puerca, and San Vicente watersheds (**Appendix A, Figure 14**).

A summary of the CZU Lightning Complex relevant to the C-CD is included in Chapter 3 (3.1.1 Fire and Fuels) and Chapter 4 (4.15 Cumulative Effects). The BLM will monitor impacts of the fire and retains the flexibility to delay or adjust implementation of components of the RMPA, as necessary, in response to the CZU Lightning Complex or future wildland fires.

1.3.2 Issues Considered but Not Further Analyzed

A. Comments Addressed Through Policy, Regulatory, or Administrative Actions

Policy or administrative actions include those actions that are implemented by the BLM because they are standard operating procedure, because Federal law requires them, or because they are BLM policy. They are issues that are eliminated from detailed analysis in this planning effort. Administrative actions do not require a planning decision to implement because they are a requirement of Federal law or BLM policy. The following issues raised during scoping are administrative actions that are outside the planning document. These actions affect the BLM's decision-making process, as the BLM will work within the scope of these administrative actions when developing reasonable alternative scenarios:

- **Resource Inventories:** A reliable inventory of natural and cultural resources will be necessary for the management of C-CD to clearly understand the significance and extent of the objects and values this unit of the CCNM is intended to protect. Agencies, organizations, and other participants have emphasized the importance of the research aspect of the C-CD management and expressed interest in being actively involved in the covering of the gaps in the understanding of coastal resources associated with the Monument. Therefore, the BLM will seek the partnerships and funding needed to undertake detailed characterizations of Monument resources. The goal of all resource characterizations efforts will be to

provide information on resource distribution, condition, sensitivity, threats, and trends that will allow managers to focus their efforts to the greatest benefit of resource conservation.

- **Revenue and Expenditures:** The BLM intends to fully fund and execute implementation of the plan in the most cost-effective manner. The RMPA is designed so that management activities can be adapted to normal fluctuations in state and federal government funding resources. Contributions and grants from sources outside the federal government and state agencies will continue to be sought on order to enhance natural and cultural resources and/or opportunities for recreation.
- **Patrol/Law Enforcement:** Law enforcement effort on the C-CD unit and adjacent lands will continue under current jurisdictional limits, using existing legal and regulatory authority to achieve the goals of this plan. Nonetheless, the BLM and other agencies have increased coordination between law enforcement entities to improve understanding of regulations, focus resources on certain areas, and/or establish agreements to effectively protect public safety and Monument resources.

B. Comments Outside the Scope or the Plan

Multiple comments suggested that the BLM leave the property as-is, citing concerns including the need to protect and preserve remaining open lands and potential impacts to neighboring communities and local public services. However, the BLM has a mandate to provide public access to the C-CD unit of the CCNM established by the Presidential Proclamation and other federal law. Therefore, these comments are not responsive to the Purpose and Need for this RMPA and fall outside the scope of the RMPA. The BLM also received comments requesting that the BLM take management actions that fall under the authority of other entities, such as improvements to County roads and/or management of visitors accessing beaches from Highway 1. As these actions fall outside the BLM's authority, they are also outside the scope of the RMPA.

C. Non-Federal Actions that are Not Reasonably Foreseeable

Several commenters requested the BLM to thoroughly analyze and discuss impacts (including cumulative impacts) of proposed C-CD development activities on adjacent properties and projects. These include major transportation or infrastructure projects like the development of the North Coast Rail Trail and the San Vicente Redwoods Public Access Plan, which were already approved by other entities in Santa Cruz County. Accordingly, the BLM has identified the likely combined effects of these two projects in Chapter 4, Section 4.20. However, the BLM determined that the effects of the Cemex Reuse Plan are not reasonably foreseeable because this project is still being planned, the outcome is unknown, and it is not likely to be completed over the next 10-15 years. Nevertheless, the BLM is committed to working with the local government and the Davenport community to ensure complimentary management of shared roads and/or trails that may be identified in the final Cemex Reuse Plan, as appropriate.

1.4 Planning Criteria

Planning criteria guide the development of a plan by helping define decision space or sideboards. The planning criteria for this planning effort are that the RMPA will:

1. Recognize valid existing rights, including deed restrictions, rights-of-way, and water rights;
2. Comply with existing law, executive orders, regulations, and BLM policy and program guidance;
3. Ensure consistency with the January 12, 2017, Presidential Proclamation that designated the property as the C-CD Unit of the CCNM (Proclamation 9563);
4. Comply with BLM Rangeland Health Standards and Livestock Grazing Guidelines for Central California;
5. Consider adjoining non-public lands when making management decisions to minimize land use conflicts; and
6. Consider cost effectiveness and feasibility of proposed actions and alternatives.

1.5 Planning Process

When amending an RMP, the BLM uses a nine-step planning process identified in 43 CFR 1600 and the BLM Land Use Planning Handbook (BLM 2005a). The public scoping period initiated the C-CD planning process, and resulted in the development of a Draft RMPA/EA. Release of this Proposed RMPA triggers a 30-day public protest period and 60-day Governor's Consistency Review. The RMPA will not be approved by a Decision Record (DR) until all protests and any consistency issues identified by the Governor's office have been resolved. Following the issuance of a DR, implementation-level decisions shall be subject to a 30-day appeal period to the Interior Board of Land Appeals (IBLA). The final step is implementation of the plan and monitoring. The BLM may alter or delay implementation of the RMPA as necessary to achieve the desired results identified in the RMPA. As management activities are identified or changes are proposed, the BLM will use traditional methods and newer technologies to ensure early coordination with others and meaningful opportunities for public involvement.

1.5.1 Relationship to BLM Policies, Plans, and Programs

This RMPA focuses on the management of the C-CD. While this RMPA will provide management decisions for this unit of the CCNM, the existing 2005 RMP will continue to guide the management decisions for the Monument's offshore rocks and islands.

Table 1-1 highlights the major plans and policies that have led to the present management of C-CD.

Table 1-1. Existing Management Plans for the Central Coast Field Office

Document Title	Year
California Coastal National Monument RMP	2005
Southern Diablo Mountain Range and Central Coast California Approved RMP and Record of Decision	2007
Coast Dairies Interim Management Plan	2014

The preceding plans are incorporated in this RMPA/EA by reference in Chapter 2 and Chapter 3 as appropriate. Other plans, policies and programs that apply to BLM land use planning in general are also described under the Regulatory Framework, below.

1.6 Regulatory Framework

A broad range of federal and state laws guide development of the BLM's amendment to the CCNM RMP. Federal laws that apply to the monument and its planning process are listed in Table 1-2, page 1-15 of the CCNM RMP (BLM 2005a). The responsible governing agency, the trigger that causes the law to apply, the process that is required by the law, and the action required during the RMP preparation process are also included in the table for each law. Key laws with bearing on the planning criteria for the C-CD are described briefly below:

Omnibus Public Land Management Act. In 2009, Public Law 111-11 established the National Landscape Conservation System (NLCS) to conserve, protect and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations including all BLM-administered National Monuments. In 2012, BLM released two relevant Policy Manuals: 6100-National Landscape Conservation System Management; and 6220-National Monuments, Conservation areas, and Similar Designations. The objectives identified in Manual 6100 for NLCS units are to effectively manage valid existing rights and compatible uses; and provide appropriate recreational opportunities, education, interpretation, and visitor services to enhance the public's understanding and enjoyment of the NLCS; use science, local knowledge, partnerships, and volunteers; and showcase

innovative techniques to manage compatible multiple uses within the NLCS for conservation outcomes. The Manual 6220 refers to BLM policy stating discretionary uses will be managed in a manner consistent with the protection of the component's values and may be prohibited when necessary, as documented in this RMPA/EA.

National Environmental Policy Act. This legislation established a national policy to maintain conditions under which people and nature can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations of Americans. NEPA established the Council on Environmental Quality (CEQ) to coordinate environmental matters at the Federal level and advise the President on such matters. The law requires all Federal actions that could result in a significant impact on the environment to be subject to review by Federal, tribal, State, and local environmental authorities, as well as affected parties and interested citizens.

Federal Land Policy and Management Act. The FLPMA of 1976 establishes the authority and provides guidance for how public lands are to be managed by the BLM. It defines BLM's mission to manage public lands on the basis of multiple use and sustained yield. The FLPMA requires that the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values be protected. It directs the BLM to develop and revise land use plans as needed for the management of public lands.

In order to implement the FLPMA, the BLM developed a Land Use Planning Handbook (H-1601-1) and NEPA Handbook (H-1790-1) that provide guidance on the requirements of the FLPMA, BLM's Planning Regulations (43 CFR 1600), and NEPA. The handbooks direct the BLM in preparing new RMPs, plan revisions, plan amendments, other equivalent plans (e.g., plans adopted from other agencies), and subsequent implementation-level plans. Procedures and requirements are set forth to ensure that the BLM's plans meet regulatory and statutory requirements. To the extent possible, these handbooks integrate land use planning requirements with requirements under NEPA.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Act also known as the California Water Code, Section 7 was created in 1969 and is the law that governs the water quality regulation in California. It established a program to protect the water quality as well as the beneficial uses of water. This act applies to surface water, groundwater, wetlands and both point and nonpoint sources of pollution. There are nine regional water boards and one state water board that has resulted from this act. The act requires the adoption of water quality control plans that contain the guiding policies of water pollution management in California.

National Historic Preservation Act. The National Historic Preservation Act (NHPA) provides for the protection and preservation of cultural resources eligible for and listed on the National Register of Historic Places (NRHP). The NHPA established the National Register of Historic Places, the Advisory Council on Historic Preservation, and the State Historic Preservation Officer.

Archaeological Resources Protection Act. The Archaeological Resources Protection Act (ARPA) was created in 1979 to govern the excavation of archaeological sites on Federal and Indian lands, as well as the removal and disposition of archaeological collections from those sites.

Native American Consultation per Executive Orders 13007 and 13175, et seq. Executive Order E.O. 13007 "Indian Sacred Sites" and E.O. 13175 "Consultation and Coordination with Indian Tribal Governments" establish requirements for meaningful consultation and collaboration with Indian tribal governments in the development of regulatory practices on Federal matters that significantly or uniquely affect their communities.

Paleontological Resources Preservation Act (PRPA). In 2009, Public Law 111-11, also established the PRPA, which states that a person may not "excavate, remove, damage, or otherwise alter or deface or attempt to excavate, remove, damage, or otherwise alter or deface any paleontological resources located on

Federal lands unless such activity is conducted in accordance with this Act.” Section 6302 dictates that “the Secretary shall manage and protect paleontological resources on Federal land using scientific principles and expertise. The Secretary shall develop appropriate plans for inventory, monitoring, and the scientific and educational use of paleontological resources, in accordance with applicable agency laws, regulations, and policies. These plans shall emphasize interagency coordination and collaborative efforts where possible with non-Federal partners, the scientific community, and the general public.”

Endangered Species Act. Management activities on private and public lands are subject to the Federal Endangered Species Act of 1973 (ESA), as amended. The ESA directs project proponents or government agencies, as appropriate, to consult with the U.S. Fish and Wildlife Service (USFWS) and/or National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) to address the effects of management activities on threatened and endangered species and designated critical habitats.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) is the domestic law that implements the United States’ commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. The MBTA is implemented by the USFWS.

Coastal Zone Management Act. The Coastal Zone Management Act (CZMA) (16 USC. 1451 et seq.), provides a crucial link between coastal states and federal activities. The CZMA encourages management of coastal zone areas and provides grants to be used in maintaining coastal zone areas. As an incentive for states to develop management plans for their coastal resources, Congress granted states the ability to review federal agency activities that affect the coastal zone and, in some circumstances, to stop or modify federally permitted activities that are not consistent with the state coastal program. The Act is intended to ensure that federal activities are consistent with state programs for the protection and, where possible, enhancement of the nation’s coastal zones. The CZMA applies to actions initiated, permitted, or funded by federal agencies within the coastal zone. As defined in the Act, the coastal zone includes coastal waters extending to the outer limit of state submerged land title and ownership, adjacent shorelines, and land extending inward to the extent necessary to control shorelines. The coastal zone includes islands, beaches, transitional and intertidal areas, and salt marshes. While the coastal zone by definition does not include federal land, the CZMA nonetheless applies to most federal activities or federally permitted activities that are located adjacent to or near the coastal zone, because such activities often affect the coastal zone and the resources therein—both onshore and off shore.

1.7 Overall Vision

The vision to guide long-term management for C-CD is to (a) allow for responsible public access, use, and enjoyment of the property, while protecting the objects and values identified in Presidential Proclamation 9563, (b) provide for sound, long-term stewardship of the property through cost-effective adaptive management designed to conserve and enhance its natural and cultural resource values and provide compatible recreation, and (c) allow for responsive stewardship of the natural and economic resources of the property.

1.8 Summary of Public Comments and the BLM Response in the Proposed RMPA/EA

During the 45-day public comment period (which lasted from February 14 to April 3, 2020), 862 comment submissions were received from individuals, agencies, and organizations. The commenters included federal and state officials; public interest groups; and private citizens. Public comments on the Draft RMPA/EA were assessed both individually and collectively by the BLM. Several of the comments were letters and/or emails containing identical text that had been suggested by environmental groups, neighborhood associations, recreation organizations, and agricultural groups. Each comment letter typically contained multiple individual comments on one or more of the topics addressed in the Draft RMPA/EA. A complete summary of the public comments is provided in **Appendix J**.

The BLM has reviewed the public comments and responded by modifying the proposed action, improving the impact analyses, making factual corrections, or indicating those circumstances which would trigger additional NEPA review.

The following list is an outline of the general comments and various sub-headings that are identified in Section 2 of **Appendix J**. These represent the major issues and concerns expressed during the public comment period on the Draft RMPA/EA. The outline below includes a summary of how the BLM addressed the issues or concerns in the Proposed RMPA/EA.

General Comments

i. Non-NEPA/BLM Issues

a. Outside BLM Jurisdiction or Authority

Many commenters identified issues or concerns that are considered to be outside BLM jurisdiction or authority, including taking responsibility for management of local roads and/or beaches. Other commenters offered ideas that are not within the scope of the RMPA/EA because they do not meet the purpose and need for the plan, like minimizing public access. The scope of the RMPA is described in Chapter 1, Section 1.3.

b. Addressed through Policy Regulations, or Administrative Actions

Several commenters requested the BLM make site- or project-specific decisions or management actions. While the RMPA/EA does include some project-specific decisions related to recreation and travel and transportation management (e.g. the location of parking areas and trails), other decisions addressed through policy, regulations, or administrative actions are typically not included within an RMPA. These include the measures necessary to mitigate impacts of future management activities to comply with the broad range of federal and state laws described in Chapter 1, Section 1.6.

c. Issues Considered but Not Further Analyzed

Commenters frequently suggested BLM complete robust resource inventories on the C-CD property, identify reliable funding sources for BLM management and patrols, and/or cumulative impacts of other regional development activities on neighboring communities. Chapter 1, Section 1.3.2 addresses issues considered but not further analyzed including resource inventories, revenue and cost expenditures, patrol and law enforcement, and non-Federal actions that BLM determined are not reasonably foreseeable.

d. Cited References

Some comments indicated the RMPA/EA decisions are based on outdated information or conflicting information. Chapter 1, Section 1.2.1 describes the relationship to relevant plans and amendments, including the Coast Dairies Long-term Resource Protection and Access Plan (ESA 2004). Appendix H identifies cited references throughout the RMPA/EA.

e. General Comments, Non-Substantive

The BLM noted many general, non-substantive comments conveying challenges due to the document format and length, and/or comments that were unrelated to environmental issues or impacts and/or lacked

substantive input to inform the draft RMPA/EA review (e.g., expressed support or opposition for a particular alternative without additional discussion).

ii. NEPA Process

a. Level of NEPA Documentation

Multiple commenters believed an EA is not the appropriate level of NEPA documentation, and that an environmental impact statement (EIS) should be prepared. Pursuant to 43 CFR 46.305, the BLM considered these public comments and revised the Proposed RMPA and associated EA to describe the details of the agency's preferred alternative (Alternative D) in Chapter 2, incorporated additional analyses of environmental impacts into Chapter 4, and identified mitigation measures in Appendix D. In conclusion, the BLM determined the decision to approve the Proposed RMPA and EA is supported by the agency's Finding of No Significant Impacts (FONSI), and an EIS will not be prepared.

b. Stakeholder Consultation and Public Involvement

Several comments requested more time for stakeholder consultation and public involvement, particularly due to the impacts of COVID-19. As a result, the public comment period was extended for an additional two weeks. Multiple comments also expressed appreciation for the BLM engagement effort and public involvement process through the scoping period.

c. Coordination with Others

The BLM also received comments requesting the BLM provide more details on public involvement through the next stages of ongoing management planning and implementation (e.g., reviewing progress and applying adaptive management measures). Many of these details are provided in Chapter 1, Section 1.5 and Chapter 5, Section 5.2. The BLM will also use traditional methods and newer technologies (i.e. social media) to make announcements about future management activities for the C-CD property and opportunities for public involvement because of the importance of consultation and coordination with others for related projects and planning efforts.

d. Informed Decision

Commenters shared concerns that additional studies (e.g., resource inventories and cumulative impact analyses) are needed before an informed decision can be made to move forward with the RMPA. Chapter 2, Section 2.1 explains the type of decisions that are established in this RMPA as the basis for every on-the-ground action the BLM undertakes to ensure that the public lands are managed in accordance with the intent of Congress as stated in FLPMA (43 U.S.C. 1701 et seq.), and other land laws (i.e., Antiquities Act). Section 2.2 describes the overall management approach, with an emphasis on the deed restrictions, Presidential Proclamation 9536, and the broader goals for the California Coastal National Monument that inform the BLM's future management decisions for the C-CD.

iii. Purpose and Need

a. Statutes, Policies, and Regulations

The BLM received comments expressing concerns that the draft RMPA/EA does not align with the statutes, policies, and regulations to support public access while ensuring protection of the objects and values identified in the Presidential Proclamation (e.g., sensitive habitats, special status species, etc.). Although the RMPA/EA does indicate that public access will have environmental impacts, the discussion provided in Chapter 2, Sections 2.1, 2.2, and 2.3 also provide assurances that the RMPA is designed to prioritize the protection of the C-CD objects and values. As a result, the BLM's concluded that the action alternatives outlined in Chapter 2, and the Preferred Alternative (Alternative D), meet the purpose and need for the RMPA/EA described in Chapter 1, Section 1.1.

iv. Management Alternatives

a. Alternative A

Multiple commenters supported Alternative A because it offered the greatest protection and preservation of natural resources and habitats; however, other commenters conveyed that Alternative A does not offer sufficient public access opportunities or called for the BLM to analyze the status quo as the No Action

Alternative. Pursuant to NEPA, the no action alternative is required to be analyzed even if it does not meet the purpose and need. The RMPA identifies the Interim Management Plan for Cotoni-Coast Dairies as the current management direction in Section 1.2.1 because it was approved in 2014 to establish management goals for the property until a resource management plan is complete.

b. Alternative B

Several commenters also valued the additional level of fuels reduction, vegetation, and invasive species management in Alternative B, but common concerns often related to allowing recreational hunting with habitat/wildlife enhancements and broadcast spraying of herbicides. The BLM's preferred alternative (Alternative D) addresses many of these public concerns because it prohibits aerial herbicide applications and permits archery hunting only in RMZ2.

c. Alternative C

Multiple commenters supported Alternative C because it offered the highest level of public access among the three alternatives. However, the increased proposed recreational activities in Alternative C corresponded with increased concerns about the potential negative environmental, social, and economic impacts. For instance, several commenters indicated they were fine with dogs on leash but were opposed to off-leash areas. Accordingly, the BLM revised the impact analysis for Alternative C in Chapter 4 and developed a preferred alternative to address these concerns, as described below.

d. Management Alternatives

The BLM's Preferred Alternative (Alternative D) is identified in Chapter 2. It addresses many of the public concerns about management alternatives because it prohibits aerial herbicide applications; limits the number of parking areas and trails; imposes restrictions on trail use, camping, and/ or special recreation events; requires dogs to be on leashes and excludes them from specific areas and trails; permits archery hunting only in RMZ2 and excludes provisions for game stocking [i.e. wildlife enhancement]. Furthermore, the BLM's RMPA describes requirements for coordination with others and opportunities for public involvement in future management activities in Chapter 1, Section 1.5.

e. Alternatives Considered but Not Analyzed in Detail

Some organizations recommended alternative management approaches, but they were eliminated from detailed analysis because the BLM determined that they either did not meet the purpose and need for the RMPA/EA (Section 1.1), were covered under alternatives analyzed in the RMPA/EA, or were not practical or feasible alternatives due to technical, economic, and legal and policy considerations. The rationale for alternatives considered but not analyzed in detail is described in Chapter 2, Section 2.20.

v. Alternatives: Menu of Options for Preferred Alternative

a. Land Uses:

i. Agriculture and Grazing

Generally, commenters conveyed support for the benefits and protection of sustainably managed agriculture and grazing operations. As described in Chapter 1, Section 1.2, the Grant Deed requires the C-CD property to be managed only for open space, grazing, and public recreational access uses and development in a manner consistent with the protection and preservation of coastal resources. The BLM's purpose and need (Section 1.1) also says the RMPA is needed to establish land use decisions and management actions for other BLM programs, including livestock grazing. Therefore, the BLM's preferred alternative (Alternative D) is designed to address these concerns by ensuring grazing would be used as a management tool to improve ecosystem health. Furthermore, the BLM is committed to working with grazing operators and other partners to improve the grazing regime, manage fuels, protect wetland and riparian habitats, and improve habitat for salmonids and other wildlife, as described in Chapter 3, Section 3.16.

ii. Acquisition and Easements

The BLM received comments that expressed both support for and concerns with potential land acquisition and easements. To address concerns expressed by Santa Cruz County, the BLM revised the proposed management action (**MA-LAR-1**) to make it clear the Presidential Proclamation 9563 prohibits incorporating any lands into the CCNM that are not already included within the C-CD property's boundaries. The BLM also revised the impact analysis in Chapter 4, Section 4.13.4, to explain that if

adjacent land were proposed to be acquired by the BLM, it would not be subject to the decisions in this RMPA and would need to undergo its own NEPA planning process. Other comments supported the BLM considering opportunities for land acquisition/easements, as this would expand options to design more sustainable and logical public access (e.g., trail networks).

b. Cultural and Heritage Resources

Commenters emphasized a need to protect cultural resources and protect the rights of Tribes. Several specifically mentioned the descendants of the Cotoni People and expressed appreciation for the BLM's engagement with the Amah Mutsun Tribal Band as an advisory partner in the management of the C-CD property. As described in Chapter 4, Section 4.6, the BLM's goals and objectives for cultural resources management program focus on protecting the significance of cultural resources by ensuring they are managed in a manner suited to the characteristics, attributes, and local tribal uses that contribute to their public importance; giving adequate consideration to the effects of land use decisions on cultural properties; towards meeting legal and regulatory obligations through a system of compliance fitted to BLM's management systems; and toward ensuring cultural resources on public land are safeguarded from improper use and responsibly maintained in public interest. The RMPA also says the BLM will continue to consult with federally and non-federally recognized tribes to help address other issues of concern, including but not limited to access rights, disruptions of cultural practices, impacts on visual resources important to the tribes, and impacts on subsistence resources.

c. Fire and Fuels

Overall, comments frequently identified fire management as a major concern. Numerous environmental organizations also expressed strong support the proposed prescribed burning program on Cotoni-Coast Dairies to promote ecological health and reduce the risk of catastrophic wildfire. Therefore, the BLM would expand shaded fuel break projects along Warrenella Road and Bonny Doon Road to mitigate the risks of wildfire and help keep surrounding communities safe under all alternatives for fire management, as described in Chapter 2, Section 2.5.

d. Vegetation Management: Herbicides and Pesticides

Various comments expressed support for general vegetation management, particularly to help reduce wildfire risk and the spread of non-native species. Commenters also requested the BLM further articulate its approach for the use of herbicides and pesticides on the property. In response, the BLM revised Appendix F to include Alternative D and make it clear the RMPA prohibits aerial herbicide treatments. The BLM also revised the impact analysis in Chapter 4, Section 4.3, to explain the use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to riparian areas and wetlands.

e. Biological Resources: Habitat, Wildlife, and Special Status Species

Various comments also expressed support for habitat protection and restoration that is proposed for RMZ 2 and RMZ 4. As described in in Chapter 4, Section 4.4, this would have major long-term benefits across the landscape because it would promote wildlife and special status species protection by sustaining movement corridors and the viability of the habitat to support various species. Proposals for Wild and Scenic River designation are also included under Alternative D, that would support recovery of native fishes and other aquatic species.

f. Services and Facilities: Traffic, Trauma, Toilets, and Trash

As expected, the BLM received several comments concerned with the amenities and services to fully cover what were often referred to as the "4T's" – Traffic, Trauma (police, fire, and rescue response), Toilets, and Trash. Occasionally, "transients" were also identified as a concern. Commenters appreciated management actions that would minimize public access impacts like providing garbage receptacles in closed containers and removed daily. Commenters also valued amenities that supported equitable access to those with limited mobility (e.g., ADA compliant picnic tables). Therefore, the BLM would conduct regular maintenance, patrols, and monitoring to help keep visitors and surrounding communities safe under all alternatives for "Recreation Resources", as described in Chapter 2, Section 2.14. Under Alternative D, the BLM proposes

to use a phased-approach (**MA-REC-16**) to implement the RMPA to ensure the Central Coast Field Office has the capacity and resources to sustain these amenities and services.

g. Access Opportunities:

i. General Access and Allowable Uses

Commenters expressed diverse perspectives on the types and level of allowable recreational activities. Therefore, the range of alternatives and the BLM preferred alternative (Alternative D) opportunities for research, education, and stewardship to enhance awareness and understanding of the Monument and the surrounding landscape. The RMPA also promotes volunteer opportunities.

ii. Parking/Access Fees

The BLM received differing viewpoints related to charging parking or access fees. Therefore Chapter 2, Section 2.14, was updated to explain that prior to establishing fees for these sites, the BLM would ensure that adverse impacts to neighboring communities (i.e. offsite parking) can be minimized through collaboration with Santa Cruz County, neighbors, and other partners.

iii. Access Points and Trail Connectivity

Public comments about access points and trail connectivity tend to focus on the safety concerns for specific local roads similar to comments raised during the scoping period. As a result, the BLM's preferred alternative avoids parking developments along Swanton Road and Bonny Doon Road because they have potential to increase risk to public safety and/or impede emergency service responsiveness. The BLM also incorporated an approach to developing public access to the C-CD that resembles the "Northgate" and "Southgate" recommendations that were submitted by the Davenport North Coast Association and the Rural Bonny Doon Association. Under the Proposed RMPA, the BLM would pursue development of the parking areas in RMZ1 and RMZ 3 during Phase 1 to disperse visitor use and reduce potential for concentration of impacts at a singular parking area and/or trailhead.

iv. Common Recreational Use

As shown in Appendix A on Figure 6D, proposed recreation opportunities for hiking, biking, and equestrian trail use would largely be separated into RMZ1 and RMZ3. Alternative D also precludes public camping, dogs off leash, and paragliding so the benefits to recreation resources are lower than Alternative C, greater than Alternative A, and substantially the same as Alternative B. Based on comments from the County and others, the stacked loop trails that are considered under Alternative D would span smaller portions of RMZ 1 and RMZ 3 than the other action alternatives. For example, the BLM eliminated trail segments under Alternative D that traversed steeper terrain where emergency services would be difficult to provide and recreational use would also impact a wider variety of wildlife habitats. Chapter 4, Section 4.11.6 explains that expanding the opportunities and places for recreation on the North Coast of Santa Cruz would likely reduce the number of recreationists in any given area, allow for a wider variety of recreation experiences, and improve the experience for those users. Therefore, Alternative D offers good potential for new recreational opportunities that would ultimately help relieve the pressures in already crowded areas.

v. Hunting/Shooting

Commenters expressed diverse perspectives about allowing recreational hunting. Several indicated allowing hunting conflicts with management restrictions; but the plain language of the Grant Deed and/or the Presidential Proclamation 9563 does not restrict this activity; and there are numerous National Monument's under the BLM's management that allow hunting licensed by the State of California, including the CCNM. Many shared concerns that hunting/shooting poses public safety risks, particularly due to the property's relative small size and proximity to other properties, or expressed opposition to habitat/wildlife enhancement for the purposes of recreational hunting. In response, the BLM's preferred alternative (Alternative D) would limit hunting to archery only in RMZ 2; and more information was added to Chapter 4, Section 4.11.6, including an example of the special hunt program that CDFW recommended could be established at C-CD.

vi. Environmental Analysis

a. Analysis and Uncertainty

The BLM received multiple comments related to analysis and uncertainty in the Draft RMPA/EA. Upon revision, the BLM has determined there are sufficient descriptions of existing conditions (Chapter 3) and analyses on environmental consequences (Chapter 4) in order to inform the public and the BLM decision-makers about the potential impacts to the human environment from the range of alternatives described in the C-CD Proposed RMPA/EA. At the same time, the BLM acknowledges that there is a high level of uncertainty inherent to estimating visitor use for a National Monument that was transferred into public ownership and offers entirely new opportunities for use and enjoyment. Due to this uncertainty, a phased approach to trail and trailhead development is proposed under Alternative D. In Phase I, the BLM proposes to develop approximately 17 miles of trail and two parking areas while monitoring impacts of visitor use, including parking capacity. The BLM will delay implementation of Phase II if parking capacity or trail mileage is not sufficient to meet public demand. In addition, the BLM has proposed to develop a larger parking area for the northern portion of the property under Alternative D to ensure adequate parking capacity under initial stages of development.

b. Existing Conditions and Environmental Consequences:

Upon revision, the BLM has determined there are sufficient descriptions of existing conditions (Chapter 3) and analyses on environmental consequences (Chapter 4) in order to inform the public and the BLM decision-makers about the potential impacts to the human environment from the range of alternatives described in the C-CD Proposed RMPA/EA.

c. Cumulative Effects:

Upon revision, the BLM has determined there are sufficient descriptions of existing conditions (Chapter 3) and cumulative effects analyses (Chapter 4) in order to inform the public and the BLM decision-makers about the potential impacts to the human environment from the range of alternatives described in the C-CD Proposed RMPA/EA when considered along with other past, present, and reasonably foreseeable actions regardless of who undertakes them.

Chapter 2: Management Alternatives

Chapter 2 describes the three alternatives evaluated in the C-CD Draft RMPA/EA, which included the No Action Alternative (Alternative A) and two action alternatives (Alternatives B and C). Following public review and considering feedback on the draft plan, the BLM developed a “Preferred Alternative” that is also described in Chapter 2 as Alternative D. All the alternatives described in this chapter represent a range of management options to address the scoping issues (presented in Section 1.3 and the BLM’s Scoping Report (BLM 2019)) and to achieve the purpose and need for this RMPA. Each section discusses the management goals, objectives, and actions that would apply to the BLM’s management under the range of alternatives.

Section 2.1 describes the types of decisions that are included in the RMPA/EA. Section 2.2 describes the overall management approach for C-CD. Section 2.3 explains how the alternatives were developed and provides a summary description of each one.

Acreages presented for each alternative have been calculated using BLM Geographic Information System (GIS) data; the BLM’s surface ownership and other data included in the RMPA/EA may differ due to advancement of GIS technology, refinement in the precision of the mapping of various datasets over time, and variations in the selection of data sets utilized for calculations.

2.1 Types of Decisions

2.1.1 Land Use Decisions

The BLM’s RMPs and the types of planning decisions included therein, are the basis for every on-the-ground action the BLM undertakes. Land use plans ensure that the public lands are managed in accordance with the intent of Congress as stated in FLPMA (43 U.S.C. 1701 et seq.), and other land laws (i.e., Antiquities Act).

Decisions in land use plans guide future land management actions and subsequent site-specific implementation decisions. These land use plan decisions establish goals and objectives for resource management (desired outcomes) and the measures needed to achieve these goals and objectives (management actions and allowable uses). Proposed land use plan decisions can be protested to the BLM Director but are not reviewable by the Office of Hearings and Appeals.

The BLM’s Land Use Planning Handbook (H-1601-1; BLM 2005) provides supplemental guidance to the agency’s employees for implementing the BLM land use planning requirements established by Sections 201 and 202 of the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S.C. 1711-1712) and the regulations in 43 Code of Federal Regulations (CFR) 1600. The Land Use Planning Handbook includes guidance for preparing, revising, amending, and maintaining land use plans. This Handbook also provides guidance for developing subsequent implementation (activity-level and project-specific) plans and decisions.

Land use plan decisions for public lands fall into two categories: desired outcomes (goals and objectives) and allowable (including restricted or prohibited) uses and measures needed to achieve desired outcomes, which take the form of management actions and allowable uses.

1. *Desired Outcomes*

Land use plans must identify desired outcomes expressed in terms of specific goals and objectives. Goals and objectives direct the BLM’s actions in most effectively meeting legal mandates; numerous regulatory responsibilities; national policy, including the DOI Strategic Plan goals; State Director guidance (see 43

CFR 1610.0-4(b)); and other resource or social needs. Desired outcomes should be identified for and pertain to resources (such as biological, and cultural), resource uses (such as recreation and/or livestock grazing), and other factors (such as social and economic conditions).

2. Allowable Uses & Management Actions

After establishing desired outcomes, the BLM identifies allowable uses (land use allocations) and management actions that are anticipated to achieve the goals and objectives.

a) Allowable uses. Land use plans must identify uses, or allocations, that are allowable, restricted, or prohibited on the public lands. These allocations identify surface lands where uses are allowed, including any restrictions that may be needed to meet goals and objectives. Land use plans also identify lands where specific uses are excluded to protect resource values. Certain lands may be open or closed to specific uses based on legislative, regulatory, or policy requirements or criteria to protect sensitive resource values.

b) Management actions. Land use plans must identify the actions anticipated to achieve desired outcomes, including actions to maintain, restore, or improve land health. These actions include proactive measures (e.g., measures that will be taken to enhance watershed function and condition), as well as measures or criteria that will be applied to guide day-to-day activities occurring on public land. Land use plans also establish administrative designations such as ACECs, recommend proposed withdrawals, land tenure zones, and recommend or make findings of suitability for congressional designations (such as components of the National Wild and Scenic River System).

Appendix C of the BLM's Land Use Planning Handbook provides additional program-specific guidance for developing land use plan decisions.

2.1.2 Implementation Decisions

Implementation decisions generally constitute BLM's final approval allowing on-the-ground actions to proceed. These types of decisions require appropriate site-specific planning and NEPA analysis. Unlike land use plan decisions, implementation decisions are not subject to protest under the planning regulations. Instead, implementation decisions are subject to various administrative remedies, particularly appeals to the Office of Hearings and Appeals (Interior Board of Land Appeals). Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by the specific resource program regulations after the BLM resolves the protests to land use plan decisions and makes a decision to adopt or amend the RMP.

This RMPA/EA includes two types of decisions - land use plan-level and implementation-level decisions - and clearly distinguishes between the two types of decisions. Specifically, this chapter displays a listing of proposed land use plan decisions and implementation decisions under each resource section that are program-specific and have been considered in conjunction with the guidance presented for other resources to maintain an integrated, interdisciplinary approach to planning for the C-CD.

Implementation decisions that would be approved in the Decision Record for this RMPA/EA are labelled as such following the alphanumeric identifier for the "management actions" (MA's). The BLM has prioritized these implementation decisions based on the requirements for specific resource programs upon completion of the RMPA/EA. Figures in **Appendix A** illustrate the major management elements of each alternative. **Appendix D** contains project design features that would apply to all alternatives.

2.2 Overall Management Approach

The BLM's overall management approach is described in this section. Specific management guidance described here will be applied regardless of the alternative selected for each of the resource/use program areas.

2.2.1 Deed Restrictions

In 2014, the BLM agreed to accept donation of C-CD with deed restrictions, including the following:

1. The land shall be used and managed for open space and public recreation in a manner consistent with protection and preservation of natural resources.
2. No commercial timber operations shall be allowed.
3. Except for management, health, safety, or emergency purposes, the use of motorized off-road vehicles shall not be permitted on land outside of established roadways.

A copy of the complete grant title, including the deed restrictions, is available for review and/or download on the BLM's ePlanning website for this RMPA/EA.

2.2.2 Presidential Proclamation Management Directives

Presidential Proclamation 9563 provides the basic framework for management of C-CD. This Proclamation directs that the Secretary of the Interior manage the C-CD through the BLM, pursuant to applicable legal authorities, to implement the purposes of the proclamation. The central purpose is clearly stated as protection of the natural, cultural, and biological resource that the C-CD lands represent. The Proclamation also calls for the property to be available for public access upon completion of a management plan.

2.2.3 CCNM Goals

As a unit of the broader CCNM, the BLM will continue to manage C-CD under relevant goals and objectives that were identified in the 2005 CCNM RMP.

The general goals and objectives identified are, as follows:

- Goal 1:** Protect the geological formations and the habitat that they provide for biological resources of the CCNM.
- Goal 2:** Protect the scenic and cultural values associated with the CCNM.
- Goal 3:** Provide and promote research opportunities to understand the resources and values of the CCNM.
- Goal 4:** Provide the public with interpretive information and educational initiatives regarding the values and significance of the CCNM and the fragile ecosystems of the California coastline.
- Goal 5:** Coordinate planning and management activities with the numerous jurisdictions on and adjacent to the CCNM and use the CCNM to help enhance cooperative and collaborative initiatives and partnerships with a variety of communities, agencies, organizations, academic institutions, the public, and other stakeholders.

2.3 Summary Description of Alternatives

The range of alternatives considered in this RMPA/EA is described in detail in Sections 2.4 to 2.18 and depicted on figures provided in the appendices. Alternatives are not management decisions, but instead represent a reasonable approach to managing resources and resource uses. The action alternatives presented in this RMPA/EA reflect a range of development and management use, and resource protections. Each resource section also describes the management goals, objectives, and actions that are common to all alternatives. Section 2.19 presents a comparison of the range of alternatives. Finally, the alternatives that were considered, but eliminated from detailed analysis are described in Section 2.20. Alternatives were eliminated if they did not meet the purpose and need for the RMPA/EA, or if they were not feasible due to technical, legal, or policy considerations.

The BLM used several sources of input to develop alternatives, including existing decisions in the 2005 CCNM RMP (BLM 2005) and the Interim Management Plan for Cotoni-Coast Dairies (BLM 2014). The public scoping process, conducted from June 24, 2019 to August 2, 2019, provided an opportunity for interested members of the public, local governments, and other resource and land management agencies to comment on the planning process and/or management concerns. From the comments received, the BLM identified the key land use decisions to be addressed in the Draft RMPA/EA and incorporated them into the range of alternatives for the following resource programs:

- Upland Terrestrial Vegetation
- Riparian Areas and Wetlands (Aquatic)
- Fish and Wildlife
- Special Status Species
- Cultural Resources
- Geology
- Soil Resources
- Paleontological Resources
- Visual Resources
- Recreation Resources
- Transportation and Travel Management
- Lands and Realty
- Livestock Grazing
- Special Management Areas

The BLM further refined the range of alternatives following the public comment period on the Draft RMPA/EA, including the addition of Alternative D. A summary of public input received during this comment period is available in a summary report posted on the BLM's eplanning website. BLM responses to these comments, including a description of how they were addressed in the Proposed RMPA/Final EA, are included at the end of Chapter 1.

Management Common to All Alternatives

The BLM developed the alternatives to be responsive to issues identified during the scoping period to meet established planning criteria (outlined in Chapter 1) and resource management goals and objectives.

Under all alternatives, the BLM will incorporate Project Design Features described in **Appendix D** to minimize adverse impacts on resource objects and values while providing for a level of resource use and development consistent with current laws, regulations, and BLM policies. For example, the proposed trail alignments would include crossings of streams and other sensitive habitat areas. Therefore, stream crossings would utilize existing infrastructure, or require the construction of new bridges and other conveyances, to

minimize impacts to these sensitive areas. When merited, consultation with the USACE and the Central Coast RWQCB would be integrated into the determination of selected crossings. If the CDFW and/or RWQCB have specific concerns for such work, their recommendations will be integrated into the design.

Where wetlands or streams cannot be avoided, appropriate approvals from the USACE (for impacts to regulated wetlands or areas below the ordinary high-water mark of regulated streams) and/or the Regional Water Quality Control Board (RWQCB) shall be secured prior to initiating work in these areas. The measures included in any such authorizations shall be incorporated into the design.

Trails that are not stable and secure may be closed for public use until maintenance that brings the trail into compliance can be completed. Also, the BLM would close trails under wet weather conditions when continued use of the trails could cause damage to the trails or endanger public safety.

Species-specific surveys and species avoidance and habitat protection measures would result in land use authorizations that minimize impacts on these special status species. For federally listed species, surface disturbance will be prohibited if the USFWS Endangered Species Act Section 7 consultation concludes that the proposed action is inconsistent with the recovery needs of the species as identified in an approved USFWS Recovery Plan.

Similarly, the BLM's protection objectives for cultural resources focuses on protecting the significance of cultural resources by ensuring they are managed in a manner suited to the characteristics, attributes, and uses that contribute to their public importance; giving adequate consideration to the effects of land use decisions on cultural properties; towards meeting legal and regulatory obligations through a system of compliance fitted to BLM's management systems; and toward ensuring cultural resources on public land are safeguarded from improper use and responsibly maintained in public interest.

2.3.1 Summary of Alternative A (No Action Alternative)

Under regulation (40 CFR Part 1502.14 (d)), the BLM must include a No Action Alternative, which represents continuation of current management. Under the No Action Alternative, or Alternative A, the BLM would continue to manage the property under the CCNM RMP (BLM 2005) and the Coast Dairies Interim Management Plan (BLM 2014). The BLM would develop two access points for day-use hiking (**Appendix A, Figure 5A**). The BLM would continue to lead or authorize guided tours as appropriate.

Trail-based recreation opportunities would be limited to day-use hiking for pedestrians on designated trails. Dogs on leashes would be allowed on designated trails. Off-trail use, camping, open flames, and hunting are prohibited under Alternative A. In addition, the BLM would not issue special recreation permits (SRPs) for special events, commercial services, and organized groups. Fees would not be charged for use of facilities on the property.

The BLM would continue to manage livestock grazing as specified in the 2014 Interim Management Plan, replacing and maintaining infrastructure over time to support this program. The BLM would not pursue substantial new vegetation or fuels management programs.

2.3.2 Summary of Alternative B

Under Alternative B, the BLM would increase public access for research, education, and recreational opportunities as compared to Alternative A. Recreation facilities would include four access points (two year-round parking areas, one seasonal parking area, and one pedestrian/bicycle connection to the North Coast Rail Trail). The BLM would work with partners to develop and manage a system of multiple use trails for pedestrians, equestrians, and mountain bikes in Recreation Management Zones (RMZs) 1 and 3

(**Appendix A, Figure 5B**). Recreationists and dogs on leashes would be required to stay on designated trails. RMZs 2 and 4 would be managed as core habitat areas for fish and wildlife, with recreation access limited to guided tours only. Hunting would be allowed in RMZ2 through a special hunt program managed in partnership with the California Department of Fish and Wildlife.

The property would be managed as a day use area, with camping only allowed with specific authorization through a Special Recreation Permit (SRP) or other access permit. Non-competitive SRPs would be allowed as long as they promote understanding and appreciation of CCONM values and do not conflict with public access for the general public. The development of recreation facilities would be phased in over time, beginning in RMZ1, followed by RMZ3 (**Appendix A, Figure 5B**). Pursuant to the Federal Land Recreation Enhancement Act (REA), the BLM may collect fees for use of parking facilities on the property to help pay for upkeep of these facilities.

Grazing management would be similar to Alternative A, but the areas available for grazing would be slightly increased and better defined by vegetation type and drainages. The BLM would pursue new opportunities for restoration of biological resources on the property, including the use of herbicides and re-introduction of prescribed fire to control non-native plant species.

2.3.3 Summary of Alternative C

Alternative C would increase public access for research, education, and recreational opportunities as compared to Alternatives A and B. Recreation facilities would include five access points (three year-round parking areas, one seasonal parking area, and one pedestrian/bicycle connection to the North Coast Rail Trail). Trail-based recreation opportunities would be more extensive than under Alternatives A and B (**Appendix A, Figure 5C**). Dogs on leashes would be allowed on designated trails, with specific off-leash opportunity areas. Hunting would be allowed in RMZ2 through a special hunt program managed in partnership with the California Department of Fish and Wildlife.

The BLM would allow camping on the property at designated hike or ride-in sites on the property. SRPs (competitive and non-competitive) would be allowed if they promote understanding and appreciation of Monument values and do not conflict with public access for the general public. The development of recreation facilities would be phased in over time, beginning in RMZ1, followed by RMZ3 (**Appendix A**). Trail development in RMZ2 and designation of hike-in or ride-in camping areas could occur, but would require subsequent site-specific analysis, design and opportunity for public involvement. Public access in RMZ 4 would be limited to guided tours only. Pursuant to the Federal Land Recreation Enhancement Act (REA), the BLM may collect fees for use of parking facilities on the property to help pay for upkeep of these facilities.

Under Alternative C, more acreage would be available for grazing than under Alternatives A and B, requiring development of new fence and water infrastructure. The BLM would pursue new opportunities for restoration of biological resources on the property, including re-introduction of prescribed fire and application of herbicides for treatment of non-native plant species.

2.4 Summary of Alternative D, the “Preferred Alternative”

The Draft RMPA/EA presented a range of reasonable management actions that were analyzed to assist decision-makers and the public in understanding the potential environmental consequences of each alternative. The three alternatives considered in the Draft RMPA/EA were distinguished by the type and degree of constraints described as allowable uses undertaken to achieve the desired outcomes.

The BLM’s preferred alternative consists of elements [i.e. allowable uses, management activities] from across the range of reasonable management alternatives analyzed in the Draft RMPA/EA, including elements of Alternatives A, B, and C. After careful consideration of public comments, the BLM crafted Alternative D from the spectrum of management options already analyzed to meet the purpose and need for this Proposed RMPA/EA.

Under Alternative D, day use facilities/parking areas would be the same as those proposed under Alternative B, with three day use/parking areas (two year-round parking areas, one seasonal parking area), and pedestrian/bicycle connections to San Vicente Redwoods and the North Coast Rail Trail. Trail-based recreation opportunities would consist of trail concepts (with modifications) considered under Alternatives B and C (**Appendix A, Figure 5D**). Dogs on leashes would be allowed on specifically designated trails to protect sensitive habitat areas. RMZs 2 and 4 would be managed as core habitat areas for fish and wildlife, with recreation access limited to guided tours and permitted access only. Archery hunting would be allowed in RMZ2 through a permitted special hunt program managed in partnership with the California Department of Fish and Wildlife.

Similar to Alternatives A and B, the property would be managed for day-use only. Specific exemptions for overnight use could be authorized for traditional cultural practices (tribal groups and organizations), work groups (e.g. California Conservation Corps), research, or educational purposes. Non-competitive SRPs would be allowed as long as they promote understanding and appreciation of CCONM values and do not conflict with public access for the general public.

Pursuant to the Federal Land Recreation Enhancement Act (REA), the BLM may collect fees for use of parking facilities on the property to help pay for upkeep of these facilities under the preferred alternative. Prior to establishing fees, the BLM would work with key partners (e.g. Santa Cruz County, CalTrans) to mitigate safety hazards of offsite parking. This authorization provides the certainty needed to make long-term investments in an integrated system, sustain partnerships, and improve the recreation experience for visitor to the C-CD. Recreation fees collected under REA are reinvested at the collecting site to benefit the visitor through enhanced facilities and services. The BLM may only charge market-rate fees at sites and for activities that meet certain specified criteria. The REA also requires that the Departments establish Resource Advisory Councils (RACs) so the local community, the recreation community, and the general public can provide input into fees established by BLM at C-CD.

Grazing management would be like Alternative B. The BLM would pursue opportunities for restoration of biological resources on the property, including use of herbicides and prescribed fire to control non-native plant species. However, aerial herbicide application would be prohibited.

The BLM proposes to use a two-phased approach to the implementation of public recreation facilities, with implementation of phase two dependent on effective recreation management under Phase 1. Emphasis will be placed on the adequacy of infrastructure to accommodate visitor use, the effectiveness with which the BLM and partners are able to maintain the trail system, and the BLM and partners’ ability to address unauthorized trails and trail use, and unauthorized entry into core wildlife areas (RMZs 2 and 4), wetlands and riparian areas.

2.5 Upland Terrestrial Vegetation, including Herbicide Use and Fire

2.5.1 Goals and Objectives

Common to All Alternatives

Goals

1. Restore, maintain, or improve ecological conditions, natural diversity, and associated watersheds of high value, high-risk native plant communities.
2. Systematically remove non-native, invasive plant species, as resources permit.
3. Protect and restore native grasslands, oak woodlands, coastal scrub, and conifer forest, and wetlands and riparian zones,, and control non-native invasive species.
4. Establish a fire management program that is cost-efficient and commensurate with threats to life, property, public safety, and resources.

Objectives

- a. Maintain the natural quality and integrity of native vegetation on the CCNM.
- b. Restore the quality and integrity of native vegetation where it has been determined to be impaired as a result of human activities or non-native invasive species.

Alternatives B, C and D

Goals

5. Use prescribed fire and mechanical treatments to restore and/or sustain ecosystem health,
6. Cooperate with communities at risk within the wildland-urban interface to develop plans for fire risk reduction,
7. Cooperate with regional partners in fire and resource management across agency boundaries, and reduce wildfires, with a special emphasis in developed areas such as parking and recreation facilities and transportation corridors.
8. Utilize an integrated pest management approach and early-detection rapid response to treat non-native invasive plant species infestations.

Vegetation Management Objectives

- c. Provide a mosaic of vegetation communities to protect soils, watersheds, and wildlife.
- d. Monitor and evaluate the vegetation health of grasslands, coastal scrub, conifer forest, and wetlands and riparian zones.
- e. Restore and expand native vegetation communities with a focus on grasslands, oak woodlands, and conifer forests, including redwoods.
- f. Restore disturbed areas to stabilize soils and promote re-establishment of desired native plant communities.

- g. Establish a weeds control program to control undesirable non-native, invasive plant species. Prevent the introduction and spread of non-native invasive plant species (early detection and rapid response). Use adaptive management to improve cost-effectiveness and enhance success rate.
- h. Utilize prescribed fire as a land management tool for the following purposes:
 - Control of non-native, invasive plant species
 - Improvement of ecological function, including restoration of native coastal grasslands
 - Reduction of fuel load hazards, including in coastal scrub and chaparral vegetation communities
 - Wildlife habitat improvement
 - Restoration of traditional cultural practices

Fire Management Objectives

- a. Prioritize firefighter and public safety in all fire-management activities.
- b. Provide an appropriate management response for all wildland fires, emphasizing firefighter and public safety.
- c. Limit the intensity of wildland fire suppression efforts to the most economical response consistent with the human and resource values that are at risk.
- d. Protect sensitive cultural sites from damage by wildland fire and/or fire suppression actions.
- e. Reduce the risk of fire in wildland-urban interface communities.
- f. Reduce the risk of catastrophic wildland fire through fuels management.
- g. Promote greater diversity within plant communities with the use of prescribed fire.
- h. Increase the public's knowledge of fire's natural role in the ecosystem and the hazards and risks associated with living in the wildland-urban interface.
- i. Educate the public on fire safety and prevention measures.

2.5.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-VEG-1	Develop a non-native, invasive plant species management and control program, consistent with the long-term protection of native plant communities. This program will be designed to reduce competition from non-native plants and encourage the long-term survival of native plant communities.			
MA-VEG-2	Develop educational and interpretive materials that identify the nature and value of vegetation resources of the monument.			

	Alternative A	Alternative B	Alternative C	Alternative D
MA-VEG-3	Use livestock grazing to reduce fine fuel loads and wildfire risk and to control non-native, invasive plant species in grasslands.			
MA-VEG-4	Promote desired vegetation composition and structure for listed species habitat. Focus on grasslands, wetlands, and riparian areas.	Use restoration and revegetation to reduce soil erosion and to promote desired native vegetation composition and structure. Restoration tools may include targeted livestock grazing, prescribed fire, and mechanical treatments. Focus on grasslands, oak woodlands, and conifer forests, including redwoods.		
MA-VEG-5	No similar action	Use prescribed fire as natural land management tool to reduce fuel loads and to promote desired composition and structure. Focus on grasslands, coastal scrub, and chaparral.		
MA-VEG-6	No similar action	Rehabilitate burned areas to mitigate adverse effects of fire on vegetation, soils, water, and cultural resources.		
MA-VEG-7	Removal of invasive plant species by manual means is the preferred method of control and will be used wherever possible. The use of herbicides will be restricted to specific situations when other alternatives are determined to be infeasible or ineffective.	Use BLM approved pesticides to control invasive plant species (all areas of C-CD) and to reduce wildfire risk around infrastructure with use of small scale ground-based pesticide application methods - backpack sprayer (spot spraying); spray boom on motorized vehicle (UTV; broadcast spraying).	Use BLM approved pesticides to control invasive plant species (all areas for C-CD) and to reduce wildfire risk around infrastructure and to maintain fire breaks. Allow use of all scales of ground-based and all scales of aerial pesticide application methods - backpack sprayer (spot spraying); spray boom on motorized vehicle (UTV; broadcast spraying); commercial ag spray booms and equipment (broadcast spraying); UAS (spot	Use BLM approved pesticides to control invasive plant species (all areas of C-CD) and to reduce wildfire risk around infrastructure with use of small scale ground-based pesticide application methods - backpack sprayer (spot spraying); spray boom on motorized vehicle (UTV; Full-sized Vehicle [truck]; broadcast spraying).

	Alternative A	Alternative B	Alternative C	Alternative D
			spraying); helicopter (broadcast spraying).	
Implementation Action: MA-VEG-8	No similar action	Adopt the C-CD Weed Management Plan. and Pesticide Use Proposal (PUP) detailed in Appendix F .		

2.6 Riparian Areas and Wetlands (Aquatic), including Herbicide Use

2.6.1 Goals and Objectives

Common to All Alternatives

The BLM determined there is no specific management direction applicable to the C-CD for these resources established in the CCNM RMP (BLM 2005) or IMP (BLM 2014). In lieu of specific goals and objectives, or management actions, the BLM would adhere to existing policy to meet State and Federal regulations to protect riparian areas and wetlands.

Alternatives B, C and D

Goals

1. Protect or enhance naturally functioning riparian areas and aquatic systems.
2. Protect natural wetlands from fill and adverse effects of recreational, agricultural, grazing, and operational activities. Wetlands are areas that meet the definition used by the U.S. Army Corps of Engineers and/or the California Coastal Commission. Additional value may be as habitat for federally or state listed species.
3. Minimize disturbance to the health and proper functioning of the aquatic ecosystem, including links with backwater areas, tributaries, and groundwater systems to provide for increased channel diversity; and contribute sources of needed nutrients and woody debris to the system.

Objectives

- a. Riparian areas contain a high diversity of native plant species, provide habitat for a broad variety of terrestrial, avian, and amphibian animal species, and are an essential component of stream ecosystems. All riparian areas within C-CD shall be considered important biological and aesthetic resources and shall receive a high priority for restoration and a high level of protection from disturbance.
- b. Delineate wetlands and apply protection measures during project design and implementation. Wetlands shall be delineated by qualified staff or wetland specialists and clearly marked prior to work. Perform activities in a cautious manner to prevent damage caused by equipment, erosion, siltation, etc. Limit or restrict recreational and other activities to minimize impacts to wetland resources.

- c. Within 100 feet of the ordinary high-water mark of area waterways, reduce and/or minimize surface disturbance.
- d. Ensure that BLM actions do not cause adverse impacts to domestic water supplies in San Vicente, Liddell, and Laguna watersheds. Limit public access within these areas to ensure adequate protection.

2.6.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-RIP-1	No similar action	Restore naturally functioning riparian systems on the property where feasible. Restoration activities may include restoration of natural floodplains, as well as removal of aquatic organism migration barriers and unused infrastructure (e.g. dams, roads).		
MA-RIP-2	No similar action	Within 100 feet of the ordinary high-water mark of area waterways, enforce the following conditions: • For surface-disturbing activities, consider alternatives that would avoid impacts within this zone. • Allow facilities (including, but not limited to, riprap, levees, diversion walls, impoundments, bridges, bridge abutments, roads, campsites, buildings, utilities, and other structures) only when they meet the following two criteria: (1) where required for access to/across the stream, for health and safety, or for the maintenance of historic properties; and (2) where it is impractical to locate them outside this zone. • Seek opportunities to replace, repair, or relocate existing facilities if doing so would have a positive impact to aquatic systems. • New facilities and development may be constructed only when they meet criteria described above and when located where they do not materially impair the natural function of the stream, impede linkages to tributary inflow and backwater areas, or disrupt contribution or routing of woody debris in the channel. • Actions within the bed and banks of a stream to construct, replace, repair, or relocate essential facilities (i.e., primary roads and bridges, wastewater collection and treatment, water supply, electrical distribution, and similar		

	Alternative A	Alternative B	Alternative C	Alternative D
		facilities) and facilities that directly protect and enhance resources may be permitted provided that: i. Project design minimizes impacts to the stream, interference with linkages to tributary inflow and backwater areas, and disruption of the contribution or routing of woody debris to the system. ii. The project incorporates mitigation measures to avoid or reduce impacts. iii. The work is scheduled during the appropriate time to minimize take of endangered species.		
MA-RIP-3	No similar action	Temporarily close trails under wet conditions when continued use of trails could lead to trail damage, public safety concerns, or erosion.		

2.7 Fish and Wildlife

2.7.1 Goals and Objectives

Common to All Alternatives

Goals

1. Ensure diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms.

Objectives

- a. Restore habitat that has been adversely affected by human activity or non-native invasive species.

Alternatives B, C and D

Goals

2. Ensure diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms.
3. Maintain the natural faunal habitat to the extent possible. The natural wildlife habitat is defined as wildlife resources and habitat that are identified in Presidential Proclamation 9563.

4. Develop and allow uses that are compatible with wildlife activity, productivity, and diversity. Maintain and enhance wildlife movement across the Property and between the Property and other natural areas.
5. Balance recreation and access with protection of resources, allowing only low-impact activities in areas with high wildlife use.

Objectives

- b. Maintain or enhance viable, healthy, and diverse populations of native and desired species, including special status species, where appropriate.
- c. Restore habitat that has been adversely affected by human activity or non-native invasive species.
- d. Manage riparian areas to sustain the abundance and diversity of riparian-dependent avifauna.
- e. Manage areas of high wintering raptor densities to sustain the abundance and diversity of birds of prey.
- f. Conserve habitat for migratory birds and species listed on the U.S. Fish and Wildlife Service (USFWS) list of Birds of Conservation Concern.
- g. Nonnative animal species shall be discouraged through appropriate habitat management and, when necessary, by direct control measures.
- h. Minimize habitat disturbance in core wildlife habitat areas to reduce habitat fragmentation.

2.7.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-WLD-1	Maintain an inventory of wildlife and wildlife habitat. Other inventory priorities will be established and promoted at the outset, including but not limited to: • Focused annual surveys on selected species and sites based on partnership/stakeholder interest and abilities. • Surveys to determine status regarding invasive wildlife species and their effects on native populations. • Human use of the C-CD and its effects on wildlife habitat and populations.			
MA-WLD-2	A program for control of invasive wildlife species for the C-CD will be developed and implemented where effects on Monument resources, have been documented or are suspected. Priorities for implementation will be given to areas where problems are most acute (e.g., areas where native populations are shown to be in decline as a result of invasive species). This effort will be designed to reduce competition with native wildlife, predation on native vegetation, and degradation of habitat—and will encourage the long-term survival of native or unique monument communities and habitat. BMPs and other measures will be implemented to minimize any adverse effects on non-target species, natural resources, and the human environment. Disturbed areas will be replanted with native plant species where natural recruitment is not expected. This replanting will be designed to reduce erosion and protect visual quality. Temporary			

	Alternative A	Alternative B	Alternative C	Alternative D
	degradation of visual resources also will be avoided through screening of ground disturbance activities where possible.			
MA-WLD-3	BLM, in cooperation with its core-managing partners, will develop and implement measures to restore or improve habitat.			
MA-WLD-4	Educational and interpretive materials will be developed that identify the nature and value of wildlife resources of the monument.			
MA-WLD-5	No similar action	Enhance populations of deer, quail, and turkey to promote hunting opportunities in Recreation Management Zone (RMZ) 2 (Appendix A, Figures 5B, C).		No similar action
MA-WLD-6	No similar action	Manage RMZ 2 and 4 as core fish and wildlife protection areas. Within these areas, minimize construction of new facilities to those necessary to support ongoing quarry remediation, traditional cultural practices, and science/research (3261 acres, Figure 5B).	Manage RMZ 4 as a core fish and wildlife protection area. Within this area, minimize construction of new facilities to those necessary to support ongoing quarry remediation, traditional cultural practices, and science/research (620 acres, Figure 5B).	Manage RMZ 2 and 4 as core fish and wildlife protection areas. Within these areas, minimize construction of new facilities to those necessary to support emergency ingress/egress, valid existing rights, ongoing quarry remediation, traditional cultural practices, and science/research (3,187 acres, Figure 5D).

2.8 Special Status Species

2.8.1 Goals and Objectives

Common to All Alternatives

Goals

1. Protect designated Critical Habitat for listed species.
2. Protect and restore habitat necessary to recover populations of special status species

Objectives

- a. Coordinate with regional partners to enhance populations and habitat of special status fish, wildlife, and plant species.

Alternatives B, C and D

Objectives

- b. All streams with the potential to support salmonids and listed as Critical Habitat shall be managed in a manner to support migration, spawning, and rearing of steelhead and coho salmon.
- c. Manage California red-legged frogs and their habitat, in support of species recovery.
- d. Avoid or minimize disturbance to streams that contain juvenile steelhead or coho or are listed as critical Habitat for a listed species.
- e. Improve the condition of special status species and their habitats to a point where their special status recognition is no longer warranted.

2.8.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-SSS-1	Support efforts to protect spawning and rearing habitat for steelhead and coho salmon in cooperation with the National Marine Fisheries Service			
MA-SSS-2	Support efforts to protect California red-legged frog breeding habitat, as well as habitat for other sensitive, rare, threatened, and endangered species in collaboration with the U.S. Fish and Wildlife Service.			
MA-SSS-3	No similar action	Implement restoration actions with a goal of protecting and improving habitat for special status species. Actions would include habitat enhancement for red-legged frogs and salmonids.		
MA-SSS-4	No similar action	Enhance populations of red-legged frogs, salmonids, and other special status species consistent with approved recovery plans.		

2.9 Cultural and Heritage Resources

2.9.1 Goals and Objectives

Common to All Alternatives

Goals

1. Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations.
2. Provide access to areas for federally recognized Indian tribes as well as non-federally recognized tribal groups, communities, and individuals for the purpose of maintaining traditional values intrinsic to their cultural identities.
3. Fulfill the essential roles that public communication and heritage education play in historic preservation.

Objectives

- a. Protect NRHP-eligible and potentially eligible cultural resources from human-caused disturbance or destruction, and from natural disturbance and destruction when appropriate.
- b. Obtain scientifically and ethnographically relevant information to inform us about past human activities, to evaluate cultural resources, and for site characterization.
- c. Offer ongoing interpretation of cultural resources as a means of enhancing public appreciation.
- d. Establish a variety of heritage education programs that promote the public stewardship of cultural resources, including but not limited to conventional outreach efforts within community libraries and civic events.
- e. Evaluate and manage all cultural resource properties appropriately using the criteria from **Table 2-9**, below.

Table 2-9. Cultural Resource Allocations and Desired Outcome

Cultural Resource Use Allocations	Desired Outcome
Scientific use	Preserved until research potential is realized
Conservation for future use	Preserved until conditions for use are met
Traditional use	Long-term preservation
Public use	Long-term preservation, on-site interpretation
Experimental use	Protected until used
Discharged from management	No use after recordation; not preserved

Alternatives B, C and D

Objectives

- a. Develop and maintain relationships with non-federally recognized Native American groups who may have an interest in stewardship of traditional cultural properties (TCPs). Continue to work in collaboration with Native American groups through already established Memorandums of Understanding.
- b. Enforce laws against damage and theft of cultural resources. Administrative and physical measures to protect historic properties in the CCNM will include monitoring of resource condition, surveillance by law enforcement personnel in potential problem areas, public education, and involvement of interested parties in conformance with the Archaeological Resources Protection Act (ARPA).
- c. Collaborate with various entities to provide interpretive opportunities.
- d. Encourage research that can better define the extent, nature, and value of cultural resources of the monument (discussed in more detail under the “Research” resource use category). Cooperate with California Department of Parks and Recreation, regional information centers of the California Historical Resources Information System (CHRIS), and Native American groups. Additional collaborators may be engaged, including faculty, graduate students, and research associates of the University of California and the California State University systems—and private universities that conduct anthropological research. Partnering with academic institutions to facilitate and encourage research opportunities will help to fill cultural resource data gaps in the CCNM and the Cotoni-Coast Dairies unit.

2.9.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-CUL-2	Initial Management: As an interim management action while NRHP determinations are in process, cultural resources will be managed for their information, public, or conservation values per BLM Manual 8100 series, FLPMA, NHPA, and ARPA.			
MA-CUL-2	Eligibility of CCNM Properties for Listing in the NRHP: Prepare NRHP nominations as appropriate for cultural resources in the CCNM that are determined by the BLM as eligible for the NRHP and submit the nomination for listing per BLM policy at 8110.3.			
MA-CUL-3	Cultural Resources Management Plans (CRMPs): CRMPs that address preservation actions may be prepared for cultural resources as determined to be appropriate for management purposes, including management of site visitation.			

	Alternative A	Alternative B	Alternative C	Alternative D
MA-CUL-4	Consultation with Tribes: BLM will consult further with Native American tribes to gather information about traditional use areas and activities that may include elements of the CCNM in order to support the allowable uses as identified below under AU-CUL-1.			
MA-CUL-5	Education and Interpretation: An education and interpretation program will be developed around the CCNM's significant cultural properties (discussed in more detail under the resource use "Education and Interpretation"). The program may include printed and web-based material and also may involve public events organized around historic and/or prehistoric themes at or near significant coastal sites.			
MA-CUL-6	Research: Research for the purposes of evaluation, site characterization, and scientific investigation is encouraged when such research is consistent with the objectives of the RMP and BLM policy.			
AU-CUL-7	Native American Uses: Native American requests to practice traditional activities or participate in interpretive activities on the CCNM will be welcomed and will be approved on a case-by-case basis, consistent with the overriding purpose of monument management—which is preservation of biological, physical, and cultural resources.			
AU-CUL-8	On-Monument Activities: On-monument activities that would harm the cultural resources of the monument will be limited or prohibited as appropriate (specific activities are discussed in more detail under the resource uses above "AU-LUA-3 Prohibited Uses."). Post-review discoveries and unanticipated effects to historic properties will be treated according to the terms of the BLM California Statewide Protocol Agreement.			
MA-CUL-9	No similar action.	Manage RMZs 2 and 4 for traditional cultural property values associated with East Liddell Creek and Laguna Creek watersheds. Limit public access within these areas to guided tours emphasizing their cultural and ecological values.		

2.10 Air Quality

2.10.1 Goals and Objectives

Common to All Alternatives

Goals

1. The goal for air quality management is to ensure that BLM authorizations and management activities comply with local, State, and Federal air quality regulations, requirements, State Implementation Plans (SIPs), and Regional Air Board standards and goals.

Objectives

- a. Manage prescribed fires to comply with established air quality standards;
- b. Coordinate with Regional Air Quality Control Districts on resource management activities to ensure consistency with State air basin plans.

2.10.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-AIR-1.	Incorporate mitigation for activities and projects on BLM lands in order to comply with applicable Federal, State, and local air quality regulations.			
MA-AIR-2.	Manage fires to minimize smoke and coordinate with Federal, State, and local governments in smoke-sensitive areas to comply with local Smoke Management Programs.			
MA-AIR-3:	Coordinate with the Monterey Bay Unified Air Pollution Control District (APCD) to predict impacts on air quality from prescribed burns on Cotoni-Coast Dairies. Develop criteria for prescribed burns with the Monterey APCD to avoid air quality degradation beyond established air quality standards.			

2.11 Geology

2.11.1 Goals and Objectives

Common to All Alternatives

Goals

1. Manage soil on BLM lands such that functional biological and physical characteristics that are appropriate to soil type, climate, and landform are exhibited.
2. Restore watershed function and rectify sediment and soil stability problems to the extent practicable, in cooperation with lessees, adjacent landowners, and regulatory agencies.

Objectives

- a. Maintain the natural quality and integrity of geologic resources.
- b. Control erosion and sediment transport.
- c. Maintain vegetation cover at or above the level necessary to stabilize soils.
- d. Using predictive modeling, identify significant localities that may be in conflict with other resource uses.
- e. Allow for excavation and data recovery where unique resources exist that are threatened by natural processes or human activity.
- f. Foster public awareness and appreciation of geologic resources through educational outreach programs.

2.11.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-GEO-1	Data Recovery. Where unique geologic resources exist that are threatened by natural processes or human activity, allow for excavation and data recovery, if it is determined that this action will not adversely affect sensitive biological, physical, or cultural resources or resource values.			
MA-GEO-2	Education and Interpretation. Develop educational and interpretive materials that identify the nature and value of physical resources of the monument (discussed in more detail under the resource use “Education and Interpretation”).			
MA-GEO-3	Management Criteria. Develop criteria for identifying resources requiring protection. Criteria will include, but not be limited to, the unique nature of the resource in question, the sensitivity of the resource to disturbance, and the threat or potential threat to the resource. Identify areas requiring additional management based on the above criteria. This process will be ongoing as information becomes available through research and inventory			
MA-GEO-4	Accommodate permit requests for scientific research by qualified individuals or institutions.			

2.12 Paleontological Resources

2.12.1 Goals and Objectives

Common to All Alternatives

Goals

1. Protect paleontological resources from degradation.
2. Facilitate the appropriate scientific, educational, and recreational uses of paleontological resources such as research and interpretation.

Objectives

- a. Control erosion to prevent exposure of fossiliferous geologic formations.
- b. Allow for excavation and data recovery where unique resources exist that are threatened by natural processes or human activity.
- c. Foster public awareness and appreciation of paleontological resources through educational outreach programs.

2.12.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-PAL-1	Data Recovery. Where unique paleontological resources exist that are threatened by natural processes or human activity, allow for excavation and data recovery, if it is determined that this action will not adversely affect sensitive biological, physical, or cultural resources or resource values.			
MA-PAL-2	Education and Interpretation. Develop educational and interpretive materials that identify the nature and value of physical resources of the monument (discussed in more detail under the resource use “Education and Interpretation”).			
MA-PAL-3	Management Criteria. Develop criteria for identifying resources requiring protection. Criteria will include, but not be limited to, the unique nature of the resource in question, the sensitivity of the resource to disturbance, and the threat or potential threat to the resource. Identify areas requiring additional management based on the above criteria. This process will be ongoing as information becomes available through research and inventory.			

2.13 Visual Resource Management

2.13.1 Goals and Objectives

Common to All Alternatives

Goals

1. Where feasible, protect viewsheds from potentially degrading intrusions.
2. Maintain the existing pastoral visual character of C-CD.

Objectives

- a. Enhance opportunities for visitors and residents to view the outstanding scenic landscapes characteristic of the CCNM.
- b. Minimize new developments within the viewshed of State Highway One.
- c. Design new site developments to minimize impacts to coastal vistas.
- d. Manage public land actions and activities in a manner consistent with visual resource management (VRM) class objectives.
 - VRM Class I. Any new site developments on BLM lands will be located and designed so that they do not detract from coastal vistas. New facilities will be constructed so that the level of change to the characteristic landscape is very low and does not attract attention.
 - VRM Class II: Retain the character of the landscape: The level of change to the characteristic landscape should be low. Management activities should be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
 - VRM Class III: Partially retain the existing character of the landscape: The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

- VRM Class IV: Provide for management activities that require major modifications of the existing character of the landscape: The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

2.13.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-VRM-1	Complete visual contrast ratings for existing facilities and identify opportunities to reduce existing visual impacts through modifications. Complete visual contrast ratings for proposed surface-disturbing projects to ensure that they meet VRM class objectives.			
MA-VRM-2	VRM Classification. Manage the entire C-CD property as VRM Class I	VRM Classification. Manage the C-CD property with VRM classes reflecting VRI inventory results (i.e. VRI Class II would be managed as VRM Class II; Appendix A, Figure 10). Manage the areas immediately surrounding proposed access points as VRM Class III.		
MA-VRM-3	No similar action	Minimize visual impacts from county-designated scenic roadways (State Highway One, Swanton Road, and Bonny Doon Road). Site and design parking areas to minimize visibility from these roadways. Where these sites could be visible from scenic roadways or neighborhoods, utilize vegetation and/or grading to minimize visual impacts.		

2.14 Recreation Resources

2.14.1 Goals and Objectives

Common to All Alternatives

Goals

- Provide a range of recreational use opportunities while protecting sensitive natural and cultural resources from human impacts.
- Provide the public with interpretive information and educational initiatives regarding the values and significance of the CCNM.
- Provide a variety of experiences and settings for a diversity of users and to meet potential changes in demand while minimizing conflicts with adjacent property owners and among user groups.
- Coordinate planning and management activities with the numerous jurisdictions on and adjacent to the CCNM and use the CCNM to help enhance cooperative and collaborative initiatives and partnerships with a variety of communities, agencies, organizations, academic institutions, the public, and other stakeholders.

5. Promote sharing of ideas, resources, and expertise to increase the public's appreciation and understanding of natural and cultural resources on BLM public lands; and
6. Disseminate information that will foster responsible behavior in order to achieve the highest possible environmental quality on BLM public lands.

Objectives

- a. Visitors will be encouraged to participate in recreational pursuits on the CCNM that are respectful of the biological, cultural, physical, and scenic values of the monument.
- b. Construct and maintain appropriate facilities to support recreational uses.
- c. Design maps and brochures and educational opportunities to improve visitors' appreciation and understanding of natural and cultural resources on BLM public lands.
- d. Create experiences and settings appropriate for the desired outcome within developed and undeveloped recreation areas.
- e. Manage recreational facilities to protect natural resources and to meet user needs.

2.14.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-REC-1:	Manage Cotoni-Coast Dairies an Extensive Recreation Management Area (ERMA). Refer to Appendix A, Figure 5A.	Designate the entire 5,843-acre Cotoni-Coast Dairies a Special Recreation Management Area (SRMA) with four recreation management zones (RMZ). Refer to Appendix A, Figure 5B.	Designate the entire 5,843-acre Cotoni-Coast Dairies a Special Recreation Management Area (SRMA) with four recreation management zones (RMZ). Refer to Appendix A, Figure 5C.	Designate the entire 5,843-acre Cotoni-Coast Dairies a Special Recreation Management Area (SRMA) with four recreation management zones (RMZ). Refer to Appendix A, Figure 5D.
MA-REC-2:	Allow guided tours, education, and research on the property.			
AU-REC-3:	Allowable uses are limited to non-motorized, non-mechanized recreation activities.	Allowable uses are limited to non-motorized recreation activities.		
AU-REC-4:	Visitors must stay on designated trails.	Visitors must stay on designated trails unless specifically authorized through an SRP or access permit.	Mechanized visitors (e.g. bicyclists) must stay on designated trails, non-mechanized visitors encouraged to stay on	Same as Alternative B

	Alternative A	Alternative B	Alternative C	Alternative D
			designated trails through education and outreach.	
AU-REC-5:	Day use only is allowed.	Camping is allowed by permit only (through an SRP or access permit).	Establish designated hike-in or ride-in primitive camping sites on the property.	Day use only is allowed. Exemptions may be granted for traditional cultural practices (tribal groups and organizations), work groups (e.g. California Conservation Corps), research, or educational purposes only. Campfires would be prohibited year-round to reduce the potential for fire starts.
AU-REC-6:	Dogs are allowed on leash only.		Dogs are allowed off leash in designated areas only. In all other areas, dogs are allowed on leash only.	Dogs are allowed on leash only on trails designated for this use.
MA-REC-7:	No fees or permits are required for parking and/or trail use.	Establish all Day Use Sites as fee areas for parking.		Consistent with the Federal Lands Recreation Enhancement Act (FLREA), consider establishing all developed day use sites as fee areas for parking. Prior to establishing fees for these sites, ensure that adverse impacts to neighboring communities (i.e. offsite parking) can be minimized through collaboration with key partners (e.g. Santa Cruz County, neighboring landowners, CalTrans).

	Alternative A	Alternative B	Alternative C	Alternative D
AU-REC-8:	No Special Recreation Permits (SRP) are issued.	Allow non-competitive SRPs that promote understanding and appreciation of Monument values and visitor use and enjoyment.	Allow competitive and non-competitive SRPs that promote understanding and appreciation of Monument values and visitor use and enjoyment.	Same as Alternative B
AU-REC-9:	No similar action	Prohibit paragliding and hang gliding.	Allow paragliding and hang gliding through issuance of an SRP.	Same as Alternative B
MA-REC-10	No similar action	In RMZ 1, establish a loop trail system, allowing for connectivity to the adjacent San Vicente Redwoods property. Design trails for hiking and mountain biking opportunities. Promote volunteer efforts to support visitor use education, trail maintenance, and foster a healthy public land stewardship etiquette.	In RMZ 1, establish a loop trail system with connectivity to San Vicente Redwoods. Design trails for hiking, mountain biking, and equestrian opportunities. Promote volunteer efforts to support visitor use education, trail maintenance, and foster a healthy public land stewardship etiquette.	Same as Alternative B
MA-REC-11	No similar action	In RMZ 3, establish a loop trail system, allowing for connectivity to the North Coast Rail Trail. Design trails with an emphasis on hiking and equestrian opportunities. Promote volunteer efforts to support visitor use education, trail maintenance, and foster a healthy public land stewardship etiquette.		
MA-REC-12	No similar action	In RMZs 2 and 4, the BLM would allow guided tours, education, and research. Provide limited recreation opportunities within these areas to	In RMZs 2 and 4, the BLM would allow guided tours, education, and research. Following reclamation activities associated with abandoned quarries in RMZ 2, seek	In RMZs 2 and 4, emphasize environmental education, research, and traditional cultural practices (in partnership with tribal organizations). Allow for public access for

	Alternative A	Alternative B	Alternative C	Alternative D
		minimize impacts to fish and wildlife.	opportunities to establish trail connectivity between RMZs 1 and 3.	permitted use and guided tours. Provide limited recreation opportunities within these areas to minimize impacts to fish and wildlife.
AU-REC-13	No similar action	Work with CalTrans and relevant other partners to establish connectivity to the North Coast Rail Trail using a pedestrian/bicycle overpass over State Highway One. Refer to Appendix B, Access Point Concept 7, Yellow Bank Creek Gate.		
AU-REC-14	No hunting is allowed.	Allow hunting in RMZ 2 (2641 acres) under special conditions through a permitted special hunt established by the California Department of Fish and Wildlife (CDFW) in coordination with the BLM and interested parties. Prior to issuing permits for a special hunt, CDFW must work with the BLM and partners to establish regulations to define the seasons, types of game, take limits, and/or restrictions.	Allow hunting in RMZ 2 (1629 acres) under special conditions through a permitted special hunt established by the California Department of Fish and Wildlife (CDFW) in coordination with the BLM and interested parties. Prior to issuing permits for a special hunt, CDFW must work with the BLM and partners to establish regulations to define the seasons, types of game, take limits, and/or restrictions.	Allow archery hunting in RMZ 2 (approximately 2000 acres) through a permitted special hunt program established by the California Department of Fish and Wildlife (CDFW) in coordination with the BLM and interested parties. Through their special hunt program, CDFW would establish specific days, species and number of permits issued.
MA-REC-15	No similar action	In order to minimize impacts of corvids and gulls on fish and wildlife, locate picnicking sites at day use/parking areas only to concentrate this activity to areas where trash collection can occur on a frequent basis.		
MA-REC-16	No similar action	Develop recreational trails in a phased approach. Prior to beginning implementation of Phase 2		

	Alternative A	Alternative B	Alternative C	Alternative D
				in RMZ 1 or 3, ensure the following (see Appendix C for adaptive management strategy): • Sufficient parking is provided for existing and projected use • Trails maintained in good or very good condition • Unauthorized social trails addressed in timely manner • Unauthorized visitation to sensitive habitat areas is infrequent
Implementation Action: MA-REC-17	Establish and designate the following trail in the Molino Creek watershed as open to hiking • Molino Creek Trail: 1.13 miles Refer to Appendix A, Figure 6A.	Construct and designate the following trails as open to non-motorized, mechanized, and non-equestrian use in RMZ 1 (hiking, bicycling). • Molino Bank Loop: 1.97 miles • Agua Puerca Trail: 2.95 miles • Agua Puerca Loops: 3.29 miles • Warrenella Loops: 1.85 miles Refer to Appendix A, Figure 6B.	Construct and designate the following trails as open to non-motorized use in RMZ 1 (hiking, bicycling, equestrian): • Molino Bank Loop: 1.97 miles • Agua Puerca Trail: 5.47 miles • Agua Puerca Loops: 3.29 miles • Warrenella Loops: 1.85 miles Construct and designate the following trails as open to non-mechanized use (hiking, equestrian):	Construct and designate the following trails as open to non-motorized, mechanized, and non-equestrian use in RMZ 1 (hiking, bicycling): PHASE ONE • Molino Bank Loop: 3.04 miles • Agua Puerca Trail: 4.69 miles PHASE TWO • Agua Puerca Loops: 3.24 miles • Warrenella Loops: 3.05 miles

	Alternative A	Alternative B	Alternative C	Alternative D
			Molino Creek Trail: 1.13 miles Refer to Appendix A, Figure 6C.	Refer to Appendix A, Figure 6D.
Implementation Action: MA-REC-18	Establish and designate the following trail as open to hiking in the Liddell Creek watershed: Liddell Creek Trail: 1.67 miles Refer to Appendix A, Figure 6A.	Construct and designate the following trails as open to non-mechanized use in RMZ 3 (hiking, equestrian): - Cotoni Trail: 3.21 miles - Yellow Bank North Loop: 3.03 miles Construct and designate the following trails as open to non-motorized use (hiking, bicycling, equestrian). - Yellow Bank South Loop: 3.22 miles Refer to Appendix A, Figure 6B.	Construct and designate the following trails as open to non-mechanized use in RMZ 3 (hiking, equestrian): - Cotoni Trail: 3.21 miles Construct and designate the following trails as open to non-motorized use (hiking, bicycling, equestrian): - Yellow Bank North Loops: 4.71 miles - Yellow Bank South Loop: 3.22 miles Construct and designate the following trails as open to non-motorized, non-equestrian use (hiking, bicycling): - Bonny Doon Loop: 3.83 miles Refer to Appendix A, Figure 6C.	Construct and designate the following trails as open to non-mechanized use in RMZ 3 (hiking, equestrian): PHASE ONE - Cotoni Trail: 1.83 miles - Yellow Bank North Loop: 3.33 miles PHASE TWO - Cotoni Trail Extension: 2.79 miles Construct and designate the following trails as open to non-motorized use (hiking, bicycling, equestrian). PHASE ONE - Yellow Bank South Loop: 4.61 miles Refer to Appendix A, Figure 6D

	Alternative A	Alternative B	Alternative C	Alternative D
Implementation Action: MA-REC-19	No similar action	No similar action, dogs would be allowed on leash on all designated trails.	No similar action, dogs would be allowed on leash on all designated trails. Dogs would be allowed off leash in designated off-leash areas.	Allow leashed-dogs in parking areas and on the following trails: • Agua Puerca Trail • Warrenella Loops. • Yellow Bank North Loop • Yellow Bank South Loop Leashes are to be 6' max.
Implementation Action: MA-REC-20	No similar action	Do not allow for use of e-bikes on routes where motorized vehicles are prohibited. * At their discretion, the Field Manager may provide written authorization to use of e-bikes on trails designated as open to bicycling for individuals requiring accommodation.	Allow for use of low-speed electric bicycles (Class I and Class II, operated in the pedal assist mode) on trails designated as open to bicycling in line with secretarial order 3376 <i>Increasing Recreational Opportunities through the use of Electric Bikes</i> .	
Implementation Action: MA-REC-21	Establish a Day Use Site and parking facilities adjacent to Swanton Road at the Molino Creek crossing. No overnight (sunset to sunrise) parking will be allowed.	No similar action	Establish a Day Use Site (parking) at Swanton Road Gate. No overnight (sunset to sunrise) parking will be allowed. Provide for at least one public restroom and trash collection at this site. Refer to Appendix B, Access Point Concept 1B, Swanton Road Gate .	No similar action

	Alternative A	Alternative B	Alternative C	Alternative D
Implementation Action: MA-REC-22	Establish a Day Use Site and parking facilities adjacent to Bonny Doon Road at Liddell Creek. No overnight (sunset to sunrise) parking will be allowed.	No similar action		
Implementation Action: MA-REC-23	No similar action	Establish a Day Use Site (parking) at Warrenella Road Gate. No overnight (sunset to sunrise) parking will be allowed. Provide for at least one public restroom and trash collection at this site. Refer to Appendix B, Access Point Concept A.2, Warrenella Road Gate. Establish a second Day Use Site (parking) at Warrenella Road Top for seasonal weekend use. No overnight (sunset to sunrise) parking will be allowed. Provide for at least one public restroom and trash collection at this site. Refer to Appendix B, Access Point Concept B.		
Implementation Action: MA-REC-24	No similar action	Establish a Day Use Site (parking) at Marina Ranch Road, incorporating parking opportunities for equestrian use. Work with CalTrans and other relevant partners to ensure adequate ingress and egress to this site. No overnight (sunset to sunrise) parking will be allowed. Provide for at least one public restroom and trash collection at this site. Refer to Appendix B, Access Point Concepts C and D.		

2.15 Transportation and Travel Management

2.15.1 Alternative A

Common to All Alternatives

Goals

1. Maintain existing roads for administrative purposes.
2. Manage motorized access use to protect resource values, promote public safety, provide responsible motorized access use opportunities where appropriate, and minimize conflicts among various user groups.

Objectives

- a. Provide travel routes to and through BLM-managed lands as appropriate to meet resource objectives while providing for private and public access needs.
- b. Manage motorized access and mechanized vehicle use in conformance with OHV designations.

Alternatives B, C and D

Objectives

- c. Provide transportation facilities to support public access and the recreation program.
- d. Close and rehabilitate all roads not required for administrative purposes or public use, subject to available funding.

2.15.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
AU-TTM-1	No similar action.	Designate the entire 5,843-acre Cotoni-Coast Dairies as a “Limited” vehicle use area.		
Implementation Action AU-TTM-2	Designate 17.8 miles of existing roads as limited to authorized motorized use only (Appendix A, Figure 4). Designate short ingress/egress routes to proposed access points as open to motorized and non-motorized public uses (Appendix B).			
MA-TTM-3	Obtain easement for public access across small portion of Warrenella Road and make capital improvements necessary to support increased vehicle traffic and meet public safety standards.			
MA-TTM-4	Work with Santa Cruz County (Public Works) to make improvements necessary to meet public safety standards and support increased vehicle traffic [and parking] on Cement Plant Rd.			
MA-TTM-5	Obtain easement for public access across agricultural area adjacent to Marina Ranch Road and make capital improvements necessary to support increased vehicle traffic and meet public safety standards.			

2.16 Lands and Realty

2.16.1 Goals and Objectives

Common to All Alternatives

Goals

1. Provide authorizations for uses that are in the public interest while meeting plan goals and minimizing adverse impacts to resource values.

Objectives

- a. Manage existing rights-of-way, land use permits, and easements on the monument consistent with protection of the monument resources and public health and safety.
- b. Continue to recognize valid, existing rights and uses such as existing easements and other third-party rights. Coordinate with entities to support regular operations and maintenance of roads, utilities, pipelines, or telecommunications facilities within their recognized existing boundaries in a manner consistent with the care and management of the C-CD resource objects and values to be protected.
- c. Expansions and/or modifications beyond the recognized existing boundaries shall be authorized only if they are necessary for the operations and maintenance of the facility under valid existing right, and the action is authorized consistent with the care and management of the C-CD resource objects and values..
- d. Authorize new rights-of-way consistent with plan goals, BLM Manual 6220 – National Monuments, National Conservation Areas, and Similar Designations, and other applicable law and regulation.
- e. Consider acquisition of neighboring lands, or easements, from willing sellers that support C-CD objects and values or provide opportunities for public access to C-CD, consistent with resource management goals and objectives.
- f. Unauthorized use of lands would be abated by preventing, detecting, and resolving such uses. Unauthorized use of public land would be resolved through negotiation of liabilities and either termination and removal of facilities or authorization of them on a case-by-case basis. BLM lands affected by unauthorized uses would be rehabilitated as needed at the trespasser's expense. Resolution of newly discovered uses, occupancies, and development are prioritized in order to prevent further degradation or resource damage.

2.16.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-LAR-1	Presidential Proclamation. The Presidential Proclamation permits acquisition or exchange of private property and other lands [from willing sellers - within the boundary of the Upland Parcels subject to the Grant Title and Deed Restrictions] to further protect the resources for which the monument was designated. Acquired lands [i.e. in-holdings] will become part of the CCNM and will be subject to the decisions in this RMPA.			
MA-LAR-2	Consideration of Applications. Each application for use of CCNM lands will be considered on a case-by-case basis, considering the potential for the use to affect CCNM resources and the consistency of the use with the goals and objectives of this RMPA.			
MA-LAR-3	Provisions for Facility Construction. Any facilities to be constructed will be built to applicable standards as determined by the BLM authorized officer. BMPs and other measures will be implemented to avoid adverse effects on natural resources and the human environment. Any new facilities with potential for adverse effects will be subject to additional environmental review under NEPA.			
AU-LAR-4	General. Uses of the monument will be allowed consistent with proclamation goals and public safety concerns. The descriptions below further elaborate on allowed and prohibited uses.			
AU-LAR-5	Allowed Uses. The following uses will be allowed on the monument:			

	Alternative A	Alternative B	Alternative C	Alternative D
	a. Valid existing rights. Serialize and enter into the automated record all rights-of-way, easements, or other third-party authorizations. b. Emergency uses of the CCNM, such as search-and-rescue operations. Filming, if the activity complies with plan provisions. Permits for commercial filming will be required.			
AU-LAR-6	Prohibited Uses. The following uses will not be allowed on the monument: a. All forms of entry, location, selection, sale other than by exchange that furthers the protective purposes of the monument, leasing, or other disposition under the public land laws, including but not limited to withdrawal from location, entry, and patent under the mining laws; and from disposition under all laws relating to mineral and geothermal leasing. This includes locatable mineral, mineral material, and nonenergy leasable mineral exploration and extraction. b. Forest resource extraction. Appropriation, injury, destruction, or removal of any feature of this monument. Exceptions could include uses authorized by permit in association with research or management activities, collection of game species consistent with the State of California recreational hunting regulations, and collection of certain natural materials by Native Americans under BLM permit and consistent with agreements between BLM and Native Americans for the sustainable harvest of natural resources. Exceptions will be allowed only when not in violation of the California Code of Regulations and other Federal and State restrictions, or for emergency or management purposes.			

2.17 Livestock Grazing

2.17.1 Goals and Objectives

Common to All Alternatives

Goal

1. Administer grazing leases consistent with the care and management of the Monument's objects and values.

Objectives

- a. Use livestock grazing as a tool to remove and prevent the spread of non-native, invasive plant species, restore and maintain native perennial grasslands, reduce fine fuel loads, and improve habitat for special status species.
- b. Assess the ecological health and stability of C-CD to support livestock grazing.

2.17.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-GRZ-1:	Establish cooperative grazing operations, as prescribed below, consistent with legal and regulatory requirements and the protection of threatened and endangered species (Appendix A, Figures 8A-8C).			
	Pasture Acres: 1167 Pasture Names: Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, Yellow Bank Number of Head: 149	Pasture Acres: 2229 Pasture Names: Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, Yellow Bank Number of Head: 149	Pasture Acres: 2973 Pasture Names: Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, Yellow Bank Number of Head: 232	Pasture Acres: 2229 Pasture Names: Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, Yellow Bank Number of Head: 149
MA-GRZ-2	No similar action			Consider project-specific proposals for targeted grazing as a management tool to reduce fuel loads and to control non-native plant species.
MA-GRZ-3	No similar action	Where feasible while supporting ongoing grazing operations, fence spring developments and riparian areas to prevent trampling by livestock.		
MA-GRZ-4	No similar action	Install water troughs, tanks, and waterlines for better livestock distribution and forage utilization.		
MA-GRZ-5	No similar action	Construct fences for better livestock distribution and forage utilization.		
MA-GRZ-6	No similar action	Construct corrals/livestock handling facilities so that cattle can be handled safely and efficiently. Locate these facilities to minimize impacts to recreation and biological and cultural resources.		

2.18 Special Management Area – Wild and Scenic Rivers

2.18.1 Goals and Objectives

Alternatives B, C and D

Goal

1. Manage all suitable stream segments consistent with BLM policy to protect free-flowing characteristics, outstandingly remarkable values and to prevent classification impacts.

Objective

- a. Manage all suitable stream segments according to their tentative classification (**Appendix E**).

2.18.2 Management Actions and Allowable Uses

	Alternative A	Alternative B	Alternative C	Alternative D
MA-WSR-1:	No similar action	Release all rivers and creeks on the property from further study for wild and scenic river designation. Refer to Appendix E .		
MA-WSR-2:	No similar action	Manage perennial segments of the following creek systems on the property as suitable for wild and scenic river designation: San Vicente, Liddell, and Laguna. Refer to Appendix E .	Manage perennial segments of the following creek systems on the property as suitable for wild and scenic river designation: Liddell, and Laguna. Refer to Appendix E .	Manage perennial segments of the following creek system on the property as suitable for wild and scenic river designation: San Vicente. Refer to Appendix E .

2.19 Comparison of Alternatives

A summary comparison of alternatives is presented below. **Table 2.19-1** presents a summary of key recreation allocation decisions included in the RMPA. **Table 2.19-2** provides a comparison of area of proposed development for parking /day use sites. **Table 2.19-3** identifies the total length of trails by RMZ for each alternative, as applicable. For further comparison, **Table 2.19-4** identifies the new length of trail proposed for construction by RMZ and **Table 2.19-5** identifies the length of trails that overlap with existing (baseline) roads. The environmental consequences of allowable uses and management actions proposed under each alternative are presented in Chapter 4.

Table 2.19-1 Summary Comparison of Recreation Allocations/Designations Under Each Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
Special Recreation Management Area (acres)	0	RMZ1 = 1,463 RMZ2 = 2,641 RMZ3 = 1,119 RMZ4 = 620	RMZ1 = 1,463 RMZ2 = 1,629 RMZ3 = 2,131 RMZ4 = 620	RMZ 1 = 1464 RMZ 2 = 2568 RMZ 3 = 1147 RMZ 4 = 619
Number of Access Points	2 Parking Areas	3 Parking Areas (2 year-round, 1 seasonally available), 2 regional trail connections (San Vicente Redwoods, North Coast Rail Trail)	4 Parking Areas (3 year-round, one seasonally available), 2 regional trail connections (San Vicente Redwoods, North Coast Rail Trail)	Phase 1: 2 parking areas and 1 regional trail connection (North Coast Rail Trail) Phase 2: Allow for 1 additional seasonal parking area and 1 additional regional trail connection (San Vicente Redwoods)
Total Designated Trails (miles)	2.80	19.51	28.66	Phase 1: 17.5 Phase 1 and 2: 26.6
Designated Trails Available for Hiking (miles)	2.80	19.51	28.66	Phase 1: 17.5 Phase 1 and 2: 26.6

Miles of Trail Available for Equestrian Use (miles)	0	9.46	24.85	Phase 1: 9.7 (RMZ 3 only) Phase 1 and 2: 12.5 (RMZ 3 only)
Miles of Trail Available for Mechanized Use (i.e. Bicycle) (miles)	0	13.28	21.12	Phase 1: 12.3 Phase 1 and 2: 18.6
Camping	Not allowed	By Special Permit Only	Allowed in Designated Areas	Not allowed with exemptions authorized on a case-by-case basis
Dog Rules	Allowed on leash only	Allowed on leash only	Dogs allowed off leash in specifically designated areas	Allowed on leash only on specifically designated trails.
Paragliding/hang gliding	Decision deferred	Not allowed	Allowed under Special Recreation Permit (SRP) only	Not allowed
Fees	No fees	Fees charged for use of parking facilities	Fees charged for use of parking facilities	Consider use of fees, while mitigating offsite impacts through partnership with Santa Cruz County, Cal Trans and neighbors
Area Available for Hunting Under CDFW Special Hunt Regulations (acres)	0	2,641	1,629	2,568; limited to archery only.

Table 2.19-2 Estimated Disturbance Area (acres) for Draft Concepts. Parking Areas included in the Preferred Alternative (Alternative D) are highlighted tan.

	TOTAL	TOTAL	TOTAL	TOTAL
Day Use Site(s)	Graded area (acres)	Graded area (sq ft)	Fenced area (acres)	Fenced area (sq ft)
1.B - SWANTON ROAD GATE	1.35	58,761	.	.
A - WARRENELLA ROAD GATE	1.62	70,628	2.00	86,948
A.1 - WARRENELLA ROAD GATE	2.32	101,260	4.30	187,124
A.2 - WARRENELLA ROAD GATE	1.61	70,223	3.02	131,626
B - WARRENELLA ROAD-TOP	1.66	72,360	4.21	183,343
C & D - MARINA RANCH GATE	4.75	199,204	4.21	183,343
E - LIDDELL CREEK AT BONNY DOON ROAD	0.40	17,627	.	.

Table 2.19-3 Proposed Trail Length (miles) in Each RMZ by Alternative.

Alternative A		RMZ	Alternative B		RMZ	Alternative C		RMZ	Alternative D	
Molino Interim	1.13	#1	Molino Loop	1.97	#1	Molino Interim	1.13	#1	Molino Bank Loop (Phase 1)	3.04
Yellow Bank	1.67		Agua Puerca	2.95		Molino Loop	1.97		Agua Puerca Trail (Phase 1)	4.69
			Agua Puerca Mini	1.91		Agua Puerca	5.47		Agua Puerca Loops (Phase 2)	3.24
			Warrenella Lower	1.38		Agua Puerca Mini	1.91		Warrenella Loops (Phase 2)	3.05
			Warrenella Tops	1.85		Warrenella Lower	1.38			
						Warrenella Tops	1.85			
			Subtotal (mi)	10.05		Subtotal (mi)	13.70		Subtotal (mi)	14.02
		#3	Yellow Bank	1.37	#3	Yellow Bank	1.37	#3	Cotoni Trail (Phase 1)	1.83
			Yellow Bank N Loops	3.03		Yellow Bank N Loops	4.71		Yellow Bank N Loop (Phase 1)	3.33
			Marina Ranch	1.84		Marina Ranch	1.84		Yellow Bank S Loop (Phase 1)	4.61
			Marina Ranch Loop	3.22		Marina Ranch Loop	3.22		Cotoni Trail (Phase 2)	2.79
						Bonny Doon Loops	3.83			
			Subtotal (mi)	9.46		Subtotal (mi)	14.96		Subtotal (mi)	12.56
Total(mi)	2.80		Total(mi)	19.51		Total(mi)	28.66		Total (mi.)	26.58

2.19-4 New Trail Proposed for Construction by RMZ

Alternatives	RMZ	New trail length (linear feet)	New trail length (miles)	New trail area (square feet*)	New trail area (acres)
A	#1***	0	0.00	0	0.00
A	#2	9,186	1.74	36,744	0.84
B	#1***	56,915	10.78	227,660	5.23
B	#3***	43,172	8.18	172,688	3.96
C	#1***	57,804	10.95	231,216	5.31
C	#3***	67,380	12.76	269,520	6.19
D, Phase 1	#1***	40,404	7.65	161,616	3.71
D, Phase 1	#3***	46,869	8.88	187,476	4.30
D, Phase 2	#1	33,183	6.28	132,732	3.05
D, Phase 2	#3***	10,695	2.03	42,780	0.98
TOTAL ALT A →		9,186	1.74	36,744	0.84
TOTAL ALT B →		100,087	18.96	400,348	9.19
TOTAL ALT C →		125,184	23.71	500,736	11.50
TOTAL ALT D, Phase 1 →		87,273	16.53	349,092	8.01
TOTAL ALT D, Phase 2 →		43,878	8.31	175,512	4.03
TOTAL ALT D - ALL →		131,151	24.84	524,604	12.04

***NOTE: Some proposed trails partially or fully overlap with existing roads. If a length of trail overlaps with existing road, then it is calculated as Existing (baseline) road, rather than New proposed trail

*uniform trail width of 4 ft assumed

2.19-5 Overlap of Exiting Roads and Trails Proposed for Construction by RMZ

Alternatives	RMZ	Length of trail that overlaps with existing roads			
		(linear feet)	(miles)	(square feet*)	(acres)
A	#1***	4,855	0.92	48,550	1.11
A	#2	0	0.00	0	0.00
B	#1***	3,593	0.68	35,930	0.82
B	#3***	6,752	1.28	67,520	1.55
C	#1***	7,559	1.43	75,590	1.74
C	#3***	11,587	2.19	115,870	2.66
D, Phase 1	#1***	417	0.08	4,170	0.10
D, Phase 1	#3***	4,763	0.90	47,630	1.09
D, Phase 2	#1	0	0.00	0	0.00
D, Phase 2	#3***	4,020	0.76	40,200	0.92
TOTAL ALT A →		4,855	0.92	48,550	1.11
TOTAL ALT B →		10,345	1.96	103,450	2.37
TOTAL ALT C →		19,146	3.63	191,460	4.40
TOTAL ALT D, Phase 1 →		5,180	0.98	51,800	1.19
TOTAL ALT D, Phase 2 →		4,020	0.76	40,200	0.92
TOTAL ALT D - ALL→		9,200	1.74	92,000	2.11

*uniform trail
width of 10 ft
assumed

2.20 Alternatives Considered but Not Analyzed in Detail

The following alternatives were considered as possible management approaches but were eliminated from detailed analysis because the BLM determined that they either did not meet the purpose and need for the RMPA/EA (Section 1.1), were covered under alternatives analyzed in the RMPA/EA, or were not practical or feasible alternatives due to technical, economic, and legal and policy considerations. These alternatives include:

- Close Federal Lands to Public Access
- Recreation Outside of CCNM Boundaries
- Other Access Points
- Other Recommendations for the Preferred Alternative

The specific rationale for dismissing each alternative from further consideration is described below.

2.20.1 Close Federal Lands to Public Access

The BLM considered an alternative that would close Federal lands to public access. This alternative would be contrary to BLM's mission and policies, which dictate management of national conservation lands for resource objects and values, which includes public access to the C-CD. In addition, this alternative is not responsive to the Purpose and Need for this RMPA/EA, which calls for public access on C-CD. Nor is this alternative consistent with the deed restrictions imposed on the BLM upon transfer of the property to the BLM, which calls for the property to be managed for recreational uses. Therefore, an alternative that would close Federal lands to public access has been eliminated from further consideration in this RMPA/EA.

2.20.2 Recreation Outside of CCNM Boundaries

The BLM does not plan to regulate recreation that falls outside of BLM-managed public lands because the BLM does not have the authority to do so. For example, the BLM does not have the authority to dictate management of recreation on adjacent private lands. Because recreation in adjacent areas could in some instances affect monument resources, however, the BLM will work with those entities already responsible for management of recreation access to the coast, including its core-managing partner California State Parks, County Parks, and other entities as appropriate, to participate in decisions regarding recreation adjacent to BLM-managed public lands.

2.20.3 Other Access Points: Mile Marker 30.22, Yellowbank Creek and Davenport Cement Plant

The BLM received public comments on the Draft RMPA/EA encouraging the BLM to evaluate other access point locations, specifically at Yellow Bank Creek and Mile Marker 30.22. The BLM considered these proposals but did not analyze them in detail. It was determined that the potential impacts (beneficial or adverse) of development at these locations are substantially the same as other access points analyzed in the original range of alternatives.

For example, Mile Marker 30.22 is situated between two riparian areas and two existing county roads (Swanton Road and Cement Plant Road) that already intersect Highway 1. Caltrans encouraged the BLM to limit development of additional intersections on Highway 1 due to concerns about public safety and engineering constraints. Therefore, it was determined that the BLM's proposed Warrenella Road Gate access point would accomplish many of the same goals as Mile Marker 30.22, with fewer resource impacts.

Similarly, the proposal to develop a new intersection on Highway 1 and parking at Yellow Bank Creek would result in adverse impacts to sensitive resources, including Federally listed species habitat (California red-legged frog). Additionally, this proposed access point is directly across from public parking areas at Panther Gap approved by the Santa Cruz Regional Transportation Commission (SCCRTC) with the assistance of the Federal Lands Access Program (FLAP). The goal is to connect the North Coast Rail Trail to the C-CD to promote regional trail connectivity and recreation opportunities. Therefore, it was determined that the BLM's proposed Panther Gap/Yellowbank Overpass access point would accomplish many of the same goals as parking adjacent to Yellow Bank Creek, with fewer resource impacts.

The BLM also received comments calling for BLM to utilize the Davenport Cement Plant as an access point to the property. Santa Cruz County recently undertook a Coastal Restoration and Reuse Plan (Santa Cruz County 2019) for this property to develop a vision for reuse of this site. While this plan calls for incorporating public access to C-CD as a component of this site's reuse, the property continues to be owned by a private company, CEMEX. Due to the long-term reclamation and restoration needs of this site and its continued private ownership, the BLM does not consider restoration and reuse of this site to be reasonably foreseeable over the life of this RMPA. Therefore, this alternative was not analyzed in detail.

2.20.4 Other Recommendations for the Preferred Alternative

Numerous organizations conveyed the importance for the BLM to manage the C-CD in a way that compliments other regional conservation lands. In particular, the Davenport North Coast Association (DNCA), the Rural Bonny Doon Association (RBDA), and the Friends of the North Coast (FONC) submitted alternative management proposals that reflect management strategies established for the San Vicente Redwoods Public Access Plan, and other common practices observed at California State Parks or nearby conservation lands, including open space preserves and County Parks. However, many of these provisions are redundant because they are substantially the same as the range of alternatives in the RMPA; or they may be "Addressed through Policy, Regulations, or Administrative Actions", or among the "Issues Considered but Not Further Analyzed" (Chapter 1, Section 1.3.2) that are not feasible due to technical, economic, and legal and policy considerations. Therefore, while components of these alternative management proposals are included in the RMPA/EA range of alternatives, the full proposals have been eliminated from further consideration in this RMPA/EA.

3. Affected Environment

3.1 Introduction

This chapter describes existing conditions for Bureau of Land Management (BLM) resource programs, resource uses, special designations, and the social and economic environment in the Central Coast Field Office (CCFO) Planning Area. The description of the affected environment uses the best and most recent data available.

By describing existing conditions for resource programs in the Planning Area, this chapter serves as the baseline against which Chapter 4 analyzes potential impacts of the alternatives.

The California Coastal National Monument

The California Coastal National Monument (CCNM) extends from the Oregon border near Crescent City, CA approximately 1,100 miles south into Orange County, California. The CCNM spans the administrative boundaries of five (5) BLM Field Offices, including the Arcata, Ukiah, Central Coast, Bakersfield, and Palm Springs Field Office(s).

Presidential Proclamation No. 7264 established the CCNM on January 11, 2000, under the authority of the Antiquities Act of 1906 (34 Stat. 225, 16 U.S.C. 431). The Proclamation directed the BLM to protect “all unappropriated or unreserved lands and interest in the lands owned or controlled by the United States in the form of islands, rocks, exposed reefs, and pinnacles above mean high tide within 12 nautical miles of the shoreline of the State of California.”

Following designation of the CCNM, the BLM began developing a CCNM Resource Management Plan (RMP) to establish guidance, objectives, policies and management actions for the offshore rocks, exposed reefs, islands and pinnacles along the 1,100-mile coastline of California. The RMP was completed in September of 2005, establishing management direction for a variety of resources and uses within the monument.

On-Shore Expansion

The CCNM boundary was enlarged by Presidential Proclamation No. 9089 on March 11, 2014. Point Arena-Stornetta Public Lands became the first onshore unit of the CCNM, and the BLM was directed to protect its coastal bluffs and shelves, tide pools, onshore dunes, coastal prairies, riverbanks, and the mouth and estuary of the Garcia River. On January 12, 2017 the CCNM’s boundary was further expanded by Presidential Proclamation No. 9563 to include six additional areas along the California coast containing significant scientific or historic resources: Trinidad Head, Waluph-Lighthouse Ranch, Lost Coast Headlands, Cotoni-Coast Dairies, Piedras Blancas, and Orange County Rocks and Islands.

National Conservation Lands

The CCNM is a component of the BLM’s National Conservation Lands (NCL). The mission of the NCL is to conserve, protect, and restore these nationally significant landscapes that are recognized for their outstanding cultural, ecological, and scientific values.

The NCL are part of an active, vibrant landscape where people live, work, and play. They offer exceptional opportunities for recreation, solitude, wildlife viewing, exploring history, scientific research, and a wide range of traditional uses. The NCL sustain these remarkable landscapes of the American spirit for the future.

As stated in the Proclamation, the C-CD contains significant scientific or historic resources that are closely tied to the values of the CCNM. Therefore, it is the landscape aspect that connects the C-CD with the various coastal ecosystems of which it is an important part. The landscape also links the C-CD to the local and regional communities, partners, and the general public. For example, it is the landscape that provides the opportunity for using the C-CD as a focal point to link regional conservation efforts and other coastal initiatives.

To provide a complete ecological perspective to the landscape aspect of the C-CD and effectively manage this unit of the CCNM, all three of the basic dimensions of an ecosystem – physical, biological, and socio-cultural - need to be taken into account. Anything within the landscape can be placed within one of these three ecosystem dimensions, which are discussed briefly below.

The physical dimension is made up of all the non-organic, abiotic elements of an ecosystem. This consists of the non-living material components of the environment, including the topography, geology, soil, nutrients, hydrology, and climate.

The biological dimension is composed of all the living or biotic elements of an ecosystem. This includes all organisms and biological interactions.

This socio-cultural dimension consists of those elements of an ecosystem dealing with the origin, development, organization, and functioning of human societies and cultures. This includes all human-made modifications of the environment, current and past; and involves the land uses, economics, beliefs, lifestyle, and social groups.

3.1.1 Resources Not Considered

This chapter does not provide detail about environmental components that would not be affected or that are not essential to understanding or resolving planning issues. These include the following resources:

Back Country Byways. There are no designated Back Country Byways in the Planning Area.

Forest and Woodland Products. There are no forests managed for forest products on BLM lands in the Planning Area.

Energy and Minerals. There are no federal minerals underlying the BLM lands in the Planning Area and the lands are withdrawn from mineral entry.

Wild Horses and Burros. There are no Wild Horses and Burros Management Areas in the CCFO Planning Area.

3.2 Biological Resources – Vegetation

C-CD supports a wide diversity of native plant communities, as well as communities dominated by introduced non-native plant species (**Table 3.2-1; Appendix A Figure 3**). Vegetation type at C-CD is primarily influenced by soil moisture availability. Upland Terrestrial areas are entirely dependent upon seasonal winter rainfall for soil moisture. Soil moisture is replenished during the winter and drawn down through the spring and summer. In contrast, Riparian Areas and Wetlands have perennial surface flow or ponding or near surface soil moisture year-round. Riparian Areas and Wetlands provide habitat for several rare and endangered aquatic species. Due to the fundamental ecological differences of Upland Terrestrial Vegetation and Riparian Areas and Wetlands, these vegetation types are described separately.

Table 3.2-1. Vegetation type total cover (acres) at C-CD. See **Table 3.2.1-1** for vegetation naming convention and cross-walk to vegetation types described in ESA 2004 and other standard vegetation types including Sawyer et al 2009 and Barbour et al. 2007.

VEGETATION TYPE	** Acres
Upland Terrestrial Vegetation	
Non-native weedy/ruderal patches	185
Non-native grassland	476
Native grassland	314
Coyote brush encroachment	157
Coastal scrub	1,766
Coast live oak woodland	250
Chaparral	57
Broadleaf forest	12
Conifer forest	2,123
*Quarries (Non-native shrubs)	135
Riparian Areas and Wetlands	
Riparian areas	337
Perennial wetlands	7
TOTAL	5,819

*Quarries are drastically disturbed areas with a relatively high abundance of non-native shrubs.

** Acres are approximated based on the best available GIS information.

3.2.1 Biological Resources - Upland Terrestrial Vegetation

Dominant upland vegetation types at C-CD are a function of local climate (primarily average annual precipitation), topography (slope and aspect), soils (depth), and hydrology, all of which are involved in water-energy balance and environmental filtering which determines what plant species dominate where on the landscape (**Figure 3.2.1-1**). There is a strong local gradient of average annual precipitation from the lowest elevations on Terrace 2 (26 inches annual average) to the highest elevations in the mountains (43 inches) (ESA 2001, 2004). Due to the maritime climate (temperature buffering) of C-CD being located on the coast, there is little average annual temperature change across all elevations of C-CD. Average annual temperature is about 57°F with only about 15°F difference between the average in winter (50°F) and summer (65°F).

C-CD has dramatic topography owing to its location at the western edge of the Santa Cruz Mountains (geologic uplift) and naturally high rate of downcutting of drainages due to high average annual precipitation (> 50 inches) in the mountains (ESA 2001, 2004). The slope across C-CD varies from virtually level on Terrace 1, to very gentle on Terraces 2 and 3, to very steep in the uplands. Drainages that dissect C-CD in a northeast to southwest direction create a series of steep north-facing and south-facing aspects that act as a primary environmental filter determining plant species distribution and dominance across the landscape.

Distribution of more drought tolerant plant species tend to be associated with lower elevations (lower average annual rainfall), south facing slopes (warmer; more xeric), and shallow and well-drained soils (low water holding capacity). Less drought tolerant (more mesic) plant species occur at higher elevations (higher average annual rainfall), on north facing slopes (cooler; more mesic), and deeper soils (higher water holding capacity).

Dominant vegetation types at C-CD, listed in order of average annual precipitation from low to high, are non-native ruderal patches, non-native grassland, native grassland, coastal scrub, coast live oak woodland, chaparral, broadleaf forest, and conifer forest (**Tables 3.2.1-1 to 3.2.1-3**). Upland vegetation has also been influenced by historic and current land management practices including wildfire, livestock grazing, farming, and quarrying. Prior to European settlement, all the open terraces were dominated by native perennial grassland (Hayes 2002; Hayes and Holl 2003; Minnich 2008). Introduction of non-native annual plant species, intensive livestock grazing, and farming resulted in the invasion of Terrace 2 and portions of Terrace 3 by non-native ruderal patches and non-native annual grassland. The non-native ruderal patches consist of dense, six-foot tall patches of poison hemlock, mustard, and radish. Some areas of Terrace 3 where farming did not occur still support native perennial grasses and forbs, although the percentage cover is less than ten percent. Coastal scrub primarily occurs on steeper slopes around the edges of terraces and higher in elevation above the terraces on warmer, drier, south facing slopes of drainages. Coast live oak woodland, chaparral, broadleaf forest, and conifer (intermixed redwood, Douglas fir and knobcone pine) forest occur on steeper slopes, particularly wetter north facing slopes, in the upland portions of C-CD. The uplands receive the highest average annual precipitation due to high topography and additionally are at the average elevation of the coastal fog belt and intercept substantial fog drip. Historic logging of coast redwood and Douglas fir around 1900 resulted in removal of the old growth forest (ESA 2001, 2004). Virtually all the conifer forest at C-CD is second and third growth.

Wildfire was used historically by Native Americans to manage the coastal grasslands and other vegetation of C-CD (ESA 2001, 2004). Following significant European settlement of C-CD after 1850, wildfire suppression has resulted in greatly increased wildfire return interval. On August 16, 2020, a lightning storm ignited multiple fires across Santa Cruz and San Mateo Counties. Eventually these fires burned together and were collectively renamed the CZU Lightning Complex. The CZU Lightning Complex burned 86,509 acres and is by far the largest wildfire in recent history in the Santa Cruz/San Mateo County region. Prior to 2020, the last major wildfire on or surrounding C-CD was the 7,800-acre Lockheed Fire in 2009. Most of this fire burned lands to the north of C-CD, but it also included a portion of the upper Molino Creek watershed before it was transferred into public ownership. Prior to this fire, the last major wildfire was in 1948. The general lack of wildfire has resulted in thatch accumulation (residual dry matter) in grasslands that has suppressed native annual and perennial grasses and forbs. The lengthened fire return interval and lack of wildfire has also resulted in a decadent condition of coastal scrub, chaparral, and conifer forest. Most of the knobcone pine stands in the conifer forest are decadent with high natural mortality and lack of recruitment due to the lack of wildfire. Knobcone pine is serotinous (closed cone) and requires fire to open cones and release seeds for germination.

Historic farming on Terrace 2 and portions of Terrace 3 resulted in complete disturbance of the native grassland. This resulted in the native grassland being replaced by non-native ruderal patches and non-native grassland. The balance between the highly undesirable non-native ruderal patches and more desirable non-native grassland is greatly influenced by livestock grazing intensity (**Figure 3.2.1-2**). Lower livestock grazing intensity on some terraces has allowed non-native ruderal patches to dominate and coastal scrub (coyote brush) to encroach into the grasslands. Purple starthistle is persistent in some grasslands and is slowly spreading.

Second and third growth of the conifer forest is vigorous and near climax but, does not yet provide the habitat conditions of old growth forest to support marbled murrelets. Sudden Oak Death (SOD) is resulting in persistent, moderate mortality of tanoak in the upper watersheds of East Branch Liddell, Yellow Bank Creek, and West Branch Laguna Creek. SOD poses a threat to other native oak species at C-CD, including coast live oak.

Limestone and shale quarrying in the uplands of San Vicente Creek and Liddell Creek removed the soil and chaparral and forest vegetation. The quarries have been abandoned for more than 20 years. Vegetation recruitment on the quarry floors and on tailings piles has consisted primarily of a mix of non-native annual and perennial grasses and forbs; non-native shrubs including French broom and pampas grass; pioneer native woody species including coyote brush and California sagebrush; and planted (restoration) native trees including knobcone pine and Douglas fir. French broom is slowly spreading along road edges and other disturbed areas in the conifer forest zone.



Figure 3.2.1-1. The influence of topography and precipitation on vegetation types at C-CD. The lowest elevations of C-CD near the coast have the lowest average annual precipitation and the highest elevations inland into Santa Cruz Mountains have the highest average annual precipitation. This gradient in water availability results in dominance of grassland and other herbaceous vegetation at the lower elevations, scrub at middle elevations, and woodland, chaparral, and forest at the highest elevations.



Figure 3.2.1-2. Annual grassland on Terrace 2. Dominated by non-native grassland with limited cover of non-native ruderal patches. Cattle grazing controls the extent of highly undesirable, non-native ruderal patches and maintains non-native grasslands.

Table 3.2.1-1. Herbaceous vegetation types present at C-CD. These vegetation types dominate Terraces 2 and 3, at the lowest average annual precipitation range of C-CD and also the most disturbed due to historic farming and current livestock grazing. Compiled from vegetation types listed in ESA 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007.

C-CD RMPA →	NON-NATIVE RUDERAL PATCHES	NON-NATIVE GRASSLAND	NATIVE GRASSLAND
ESA 2001, 2004 →	not identified	California annual grassland	Native grassland
Sawyer et al. 2009 & Barbour et al. 2007 ↓	<i>Brassica (nigra)</i> Semi-Natural Herbaceous Stands	<i>Avena (barbata, fatua)</i> Semi- Natural Herbaceous Stands	<i>Danthomia californica</i> Herbaceous alliance
	<i>Conium maculatum-Foeniculum vulgare</i> Semi-Natural Herbaceous Stands	<i>Bromus (diandrus, hordeaceus)-</i> <i>Brachypodium distachyon</i> Semi- Natural Herbaceous Stands	<i>Eschscholzia (californica)</i> Herbaceous Alliance
	<i>Brassica nigra</i>	<i>Lasthenia californica-Plantago</i> <i>erecta-Vulpia microstachys</i> Herbaceous Alliance	<i>Juncus patens</i> Provisional Herbaceous Alliance
	<i>Brassica nigra-Bromus diandrus</i>	<i>Festuca perrenis</i> Semi-Natural Herbaceous Stands	<i>Nassella pulchra</i> Herbaceous Alliance
	<i>Raphanus sativus</i>	<i>Avena barbata</i>	<i>Danthonia californica</i>
	<i>Conium maculatum</i>	<i>Avena barbata-Bromus</i> <i>hordeaceus</i>	<i>Eschscholzia californica</i>
	<i>Foeniculum vulgare</i>	<i>Lasthenia californica-Lupinus</i> <i>bicolor-Layia platyglossa-</i> <i>Bromus spp.</i>	<i>Juncus patens</i>
		<i>Festuca perrenis</i>	<i>Nassella pulchra</i>
		<i>Festuca perrenis-Bromus</i> <i>hordeaceus</i>	<i>Nassella pulchra-Avena spp.-</i> <i>Bromus spp.</i>
			<i>Nassella pulchra-Festuca</i> <i>perrenis (-Trifolium spp.)</i> <i>Nassella pulchra/Baccharis</i> <i>pilularis</i>

Table 3.2.1-2. Woody shrub vegetation types at C-CD. Coastal scrub types dominate the steep, dry drainage slopes at the edges of Terraces 2 and 3, at intermediate average annual rainfall for C-CD. Chaparral occurs in the understory of conifer forest. Non-native shrubs occur within drastically disturbed areas of uplands including road edges and quarries. Likewise, non-native trees have been planted in disturbed areas. Compiled from vegetation types listed in ESA 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007.

C-CD RMPA →	COASTAL SCRUB		CHAPARRAL	NON-NATIVE SHRUBS
ESA 2001, 2004 →	Coyote brush scrub	California sagebrush	Mixed chaparral	Non-native shrub patches
Sawyer et al. 2009 & Barbour et al. 2007 ↓	<i>Baccharis pilularis</i> Shrubland Alliance	<i>Artemisia californica</i> Shrubland Alliance	<i>Chrysolepis chrysophylla</i> Shrubland alliance	Broom (<i>Cystis scoparius</i>) Semi-Natural Shrublands
	<i>Frangula californica</i> Shrubland Alliance	<i>Diplacus aurantiacus</i> Shrubland Alliance	<i>Heteromeles arbutifolia</i> Shrubland alliance	<i>Cortaderia (jubata, selloana)</i> Semi-Natural Herbaceous Stands
	<i>Lupinus arboreus</i> Shrubland Alliance	<i>Acmispon glaber</i> Shrubland Alliance	<i>Chrysolepis chrysophylla</i> - <i>Arctostaphylos glandulosa</i>	
	<i>Lotus scoparius</i> Shrubland Alliance	<i>Toxicodendron diversilobum</i> Shrubland Alliance	<i>Chrysolepis chrysophylla</i> / <i>Vaccinium ovatum</i>	
	<i>Morella californica</i> Shrubland Alliance	<i>Artemisia californica</i>	<i>Heteromeles arbutifolia</i> - <i>Artemisia californica</i>	
	<i>Rosa californica</i> Shrubland Alliance	<i>Artemisia californica</i> - <i>Diplacus aurantiacus</i>		
	<i>Rubus (parviflorus, spectabilis, ursinus)</i> Shrubland Alliance	<i>Diplacus aurantiacus</i>		
	<i>Baccharis pilularis</i>	<i>Acmispon glaber</i>		
	<i>Baccharis pilularis</i> /Annual grass-herb	<i>Toxicodendron diversilobum</i> /herbaceous		
	<i>Baccharis pilularis</i> / <i>Danthonia californica</i>	<i>Toxicodendron diversilobum</i> - <i>Diplacus aurantiacus</i>		
	<i>Baccharis pilularis</i> / <i>Nassella pulchra</i>	<i>Toxicodendron diversilobum</i> - <i>Baccharis pilularis</i> - <i>Rubus parviflorus</i>		
	<i>Baccharis pilularis</i> / <i>Scrophularia californica</i>			
	<i>Baccharis pilularis</i> - <i>Artemisia californica</i>			
	<i>Baccharis pilularis</i> - <i>Eriophyllum staechadifolium</i>			
	<i>Baccharis pilularis</i> - <i>Frangula californica</i> - <i>Rubus parviflorus</i>			
	<i>Baccharis pilularis</i> - <i>Toxicodendron diversilobum</i>			
	<i>Frangula californica</i> ssp. <i>californica</i> - <i>Baccharis pilularis</i> / <i>Scrophularia californica</i>			
	<i>Lupinus arboreus</i>			
	<i>Lupinus arboreus</i> / <i>Bromus diandrus</i>			
	<i>Lotus scoparius</i>			
	<i>Morella californica</i>			
	<i>Rosa californica</i> - <i>Baccharis pilularis</i>			
	<i>Gaultheria shallon</i> - <i>Rubus spectabilis</i> - <i>Rubus parviflorus</i>			
	<i>Rubus parviflorus</i> - <i>Rubus spectabilis</i> - <i>Rubus ursinus</i>			
	<i>Rubus parviflorus</i>			
	<i>Rubus spectabilis</i>			
	<i>Rubus ursinus</i>			

C-CD RMPA →	NON-NATIVE TREES
ESA 2004 →	not identified
Sawyer et al. 2009 →	<i>Eucalyptus</i> semi-natural Woodland stand

Table 3.2.1-3. Woodland and forest vegetation types at C-CD. Woodlands and forests occur at the highest average annual precipitation range and highest elevations of C-CD. Compiled from vegetation types listed in ESA 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007.

C-CD RMPA →	COAST LIVE OAK WOODLAND	BROADLEAF FOREST	CONIFER FOREST	
ESA 2001, 2004 →	Mixed evergreen forest	Mixed evergreen forest	Mixed conifer forest	
Sawyer et al. 2009 & Barbour et al. 2007 ↓	<i>Quercus agrifolia</i> Woodland Alliance	<i>Arbutus menziesii</i> Forest Alliance	<i>Pinus attenuata</i> Forest Alliance	<i>Sequoia sempervirens</i> Forest Alliance
	<i>Quercus agrifolia</i> /grass	<i>Lithocarpus densiflorus</i> Forest Alliance	<i>Pseudotsuga menziesii</i> Forest Alliance	<i>Sequoia sempervirens</i> / <i>Arbutus menziesii</i>
	<i>Quercus agrifolia</i> /coastal sage scrub	<i>Umbellularia californica</i> Forest Alliance	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> Forest Alliance	<i>Sequoia sempervirens</i> - <i>Alnus rubra</i> / <i>Rubus spectabilis</i>
	<i>Quercus agrifolia</i> /chaparral	<i>Corylus cornuta</i> var. <i>californica</i> Shrubland Alliance	<i>Pseudotsuga menziesii</i>	<i>Sequoia sempervirens</i> - <i>Arbutus menziesii</i> / <i>Vaccinium ovatum</i>
	<i>Quercus agrifolia</i> / <i>Artemisia californica</i>	<i>Arbutus menziesii</i> - <i>Umbellularia californica</i> -(<i>Lithocarpus densiflorus</i>)	<i>Pseudotsuga menziesii</i> / <i>Corylus cornuta</i>	<i>Sequoia sempervirens</i> - <i>Lithocarpus densiflorus</i> / <i>Vaccinium ovatum</i>
	<i>Quercus agrifolia</i> / <i>Heteromeles arbutifolia</i>	<i>Lithocarpus densiflorus</i> / <i>Corylus cornuta</i>	<i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> / <i>Arbutus menziesii</i>
	<i>Quercus agrifolia</i> / <i>Heteromeles arbutifolia</i> - <i>Toxicodendron diversilobum</i>	<i>Lithocarpus densiflorus</i> / <i>Gaultheria shallon</i>	<i>Pseudotsuga menziesii</i> - <i>Quercus agrifolia</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i>
	<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i>	<i>Lithocarpus densiflorus</i> / <i>Vaccinium ovatum</i>	<i>Pseudotsuga menziesii</i> - <i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> / <i>Vaccinium ovatum</i>
	<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> -(<i>Corylus cornuta</i>)	<i>Lithocarpus densiflorus</i> - <i>Arbutus menziesii</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> - <i>Umbellularia californica</i>
	<i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> /grass	<i>Lithocarpus densiflorus</i> - <i>Umbellularia californica</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> / <i>Toxicodendron</i> -(<i>Lonicera hispidula</i>)	<i>Sequoia sempervirens</i> - <i>Umbellularia californica</i>
	<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> / <i>Corylus cornuta</i> - <i>Rubus</i> spp.	<i>Umbellularia californica</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> / <i>Gaultheria shallon</i>	<i>Sequoia sempervirens</i>
	<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i>	<i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>	<i>Pseudotsuga menziesii</i> - <i>Lithocarpus densiflorus</i> / <i>Corylus cornuta</i>	<i>Sequoia sempervirens</i> - <i>Lithocarpus densiflorus</i> / <i>Carex globosa</i> - <i>Iris douglasiana</i>
	<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> - <i>Toxicodendron diversilobum</i>	<i>Umbellularia californica</i> - <i>Arbutus menziesii</i>		
	<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> - <i>Umbellularia californica</i>	<i>Umbellularia californica</i> - <i>Lithocarpus densiflorus</i>		
	<i>Quercus agrifolia</i> - <i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>	<i>Umbellularia californica</i> - <i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> -(<i>Corylus cornuta</i>)		
	<i>Quercus agrifolia</i> - <i>Arbutus menziesii</i> / <i>Corylus cornuta</i>			
	<i>Quercus agrifolia</i> - <i>Umbellularia californica</i>			
	<i>Quercus agrifolia</i> - <i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>			

Grasslands are an important vegetative feature that provides sweeping views of the coast, supports livestock grazing, and is vital BLM Special Status species habitat bordering wetlands (ponds). Woodlands and forest are an important vegetative feature that provide extensive vertical habitat structure and vegetative cover to protect riparian areas and water resources. Upland vegetation condition is slowly trending towards an adverse condition for grasslands and forests.

Key indicators of upland vegetation health include cover, structure, and composition.

Forecast

Changes to annual precipitation and temperature patterns due to climate change will have profound effects on the ecosystems of C-CD. The current projected greenhouse gas emissions scenario model is Relative Concentration Pathway (RCP) 8.5 (Cal-Adapt 2019). Consensus of projected models for RCP 8.5, for C-CD through the year 2100, suggest a sharp increase in average annual temperature from 57°F to 63°F (+6°F; much warmer) and a modest increase in average annual precipitation of 3 to 5 inches (slightly wetter; Field et al. 2016; Thorne et al. 2016 Beck et al. 2018; Cal-Adapt 2019). The much warmer temperature, coupled with only a slight increase in precipitation, would result in substantially greater evapotranspiration rates and may ultimately result in decreased water supply to riparian areas and wetlands.

Coastal regions of California with a current temperature and precipitation regime similar to that projected for C-CD are located between the cities of Oxnard and San Diego, more than 250 airline miles south of C-CD. The Oxnard to San Diego region (Santa Monica Mountains; Elsinore Mountains) therefore, represents a climate analog to the future projected climate for C-CD. Theoretically, if the same plant species and plant communities of C-CD are currently present in the Oxnard to San Diego region, then those plant species and vegetation types should persist at C-CD with projected changes. Non-native ruderal patches, non-native grassland, native grassland, coastal scrub, coast live oak woodland, chaparral, and broadleaf forest containing the same plant species are all common in the Oxnard to San Diego region. Conifer forest with coast redwood and Douglas fir as dominant species is entirely absent from that region. Both coast redwood and Douglas fir are currently already near their southernmost range limits at C-CD. The absolute southern range limit (trailing edge) of both coast redwood and Douglas fir is about 100 airline miles south near the coastal town of Gorda. Coastal areas south of Gorda are outside of the climate niche (envelope) of both conifer species. Therefore, with projected changes to annual precipitation patterns and annual temperatures, both coast redwood and Douglas fir (conifer forest) have a high probability of being extirpated from C-CD. Additionally, the more mesic vegetation types such as broadleaf forest will likely become more limited in extent. Chaparral, coast live oak woodland, coastal scrub, and grasslands will likely expand with some shifts from south to north aspects and upward in elevation to track topographic microclimates.

3.2.2 Fire and Fuels

Fire is an integral part of the ecosystem of California's Central Coast. It has shaped the landscape and has been a part of the human interaction with the land for approximately 11,000 years. The local fuels, weather, topography and ignition patterns have been stable for much of that time. C-CD supports a diversity of vegetation types including grasslands, coastal scrub, oak woodlands, and conifer forest. The fire return intervals and levels of fire dependence for these different vegetation types vary. Historically, the fire return interval for grasslands and coastal scrub was 5–20 years, whereas, the fire return interval for oak woodland and conifer forest was 11–50 years.

The primary source for fire in the area has been human caused for as long as there is a written record. In the absence of human caused fire the primary cause of fire is lightning. This moves the fire return interval up to 100-150 years and mixed to high severity burning. These are often stand replacing fires in drought years under extreme conditions. Fires were regularly ignited by first the local tribes, then loggers, and then farmers from 9,000 BCE until the mid-1940's. Since then fire has more often been excluded and has occurred with a lower frequency and higher intensity of fires.

On August 16, 2020, a lightning storm ignited multiple fires. On August 16, 2020, a lightning storm ignited multiple fires across Santa Cruz and San Mateo Counties. Eventually these fires burned together and were collectively renamed the CZU Lightning Complex. The CZU Lightning Complex burned 86,509 acres, and is by far the largest wildfire in recent history in the Santa Cruz/San Mateo County region.

Approximately 1,052 acres of C-CD burned in this fire in the Molino, Agua Puerca, and San Vicente watersheds (**Appendix A, Figure 14**). Full containment of the fire is expected to be accomplished on September 28, 2020. A summary of the effects of the CZU Lightning Complex Fire is provided below.

Prior to 2020, the last major wildfire on or surrounding C-CD was the 7,800-acre Lockheed Fire in 2009. Most of this fire burned lands to the north of C-CD, but it also included a portion of the upper Molino Creek watershed before it was transferred into public ownership. Prior to this fire, the last major wildfire was in 1948. The lack of recurring wildfire has led to increased thatch build up in the non-native annual grasslands and a decadent condition of woody vegetation across C-CD.

Fire pre-suppression work is focused on limiting likely ignition sources and higher fire danger areas. The most likely fire ignition sources are caused by humans. These may be from multiple ignition types including utility infrastructure, recreation, Wildland Urban Interface (WUI), and intentional.

Infrastructure has two main ignition sources including powerlines and roadways. Powerlines are the responsibility of the PG&E utility company to maintain and mitigate fire hazard. The roadways are a combination of responsibilities from either the existing rights-holders, the county of Santa Cruz, and/or the BLM.

In the WUI there are two types of hazards from ignition. Fires may start on the BLM-administered lands and threaten or damage structures, or fires may start on private and result in resource damage on C-CD. In either case there are added hazards to first responders and public from WUI fires.

Fuel Breaks

Fuel breaks are currently constructed and being maintained in two locations at C-CD. From north to south the current fuel breaks include Warrenella Road (which includes several branch roads), and Bonny Doon road. Warrenella Road is a significant road for access and fire suppression. The road forks into three branches maintained at varying levels that may be improved upon for access in the future. There is also a PG&E substation along Warrenella Road that is on private land surrounded by BLM-administered lands. This power substation is currently one of the most likely sources of fire starts (i.e. unintended ignitions).

Bonny Doon road is a county-maintained road that traverses [or bisects] the property connecting the rural community of Bonny Doon to State Highway 1. While it is not designed or maintained primarily for fire use, it would function both as a barrier to spread and for emergency access for suppression in the event of a wildfire.

Current fuels conditions and residential developments in the area make it challenging to use prescribed fire in the same way it has existed on the landscape for the last several thousand years. The C-CD RMPA proposes three primary vegetation management methods including livestock grazing, herbicide use, and prescribed fire. Livestock grazing can reduce fine fuel loads in grasslands and control the encroachment of coyote bush and other shrubs into grasslands. Herbicide application can be used to control vegetation locally around potential ignition sources such as Day Use Sites and utilities. Prescribed fire can also be used to manage vegetative cover and reduce fuel loads. Small to moderate sized prescribed fires reduces fuel loads, improves vegetative structure, and returns nutrients to the soil.

Fire can also be used in conjunction with other management practices to support other functions at C-CD. As an example, undesired brush and woody debris can be disposed of through piling and burning. This can be a benefit to the botany program to reduce weeds or with the archeology program to protect historic structures and sites. Cut and pile techniques have already been used successfully on C-CD to promote meadow restoration and cultural site protection.

Forecast

Increases in the number of extremely dry and extremely wet weather seasons are predicted by the end of the century (Borunda 2018). This type of weather pattern can provide more favorable conditions for wildfire and also lengthen the fire season as the winter rains which historically arrive in October in November are delayed. Santa Ana winds, which typically arrive in October to November can overlap a period of extremely dry vegetation and lead to increased risk and spread of wildfires fires.

The CZU Lightning Complex resulted in an unprecedented level of destroyed and damaged structures within unincorporated Santa Cruz County. Most of the losses near C-CD occurred up Swanton Road and along Empire Grade near Bonny Doon. The fire also damaged a PVC pipeline on private lands in the San Vicente watershed that serves as the sole source of water for the town of Davenport.

Observations of fire behavior on C-CD suggest a mosaic of burn intensities, dependent on fuel type, slope, and aspect. In areas where coastal scrub burned and french broom (non-native shrub) is present, french broom may opportunistically invade and expand. Ingrasslands, conditions should remain the same and even possibly improve in the short term since accumulated thatch has been burned off. Forest and chaparral areas should have little to no adverse impact and be improved over the long term. The wildfire has reduced accumulated fuel loads and will facilitate knobcone pine (closed cone pine) recruitment (new seedlings). The important ecological role of fire in maintaining habitat diversity, nutrient cycling and wildlife habitat creation, suggests that the CZU Lightning Complex will not have long-term detrimental ecological effects to fish and wildlife. A short-term detrimental impact is anticipated for reptiles, terrestrial amphibians, and small mammals. However, the return to an earlier successional stage may lead to a short-term increase in some species. The potential for increased mobility of post-fire sediment is a concern for breeding salmonids and the California red-legged frog, which may be expected to see a reduction in successful reproduction in the short-term.

Based on the lessons learned from the Lockheed Fire Post Fire Risk Assessment released by the San Mateo-Santa Cruz Unit of California Department of Forestry and Fire Protection on September 30, 2009, the principal concern with the CZU fire area is an increase in the potential for floods, debris torrents, and debris flows. Also of concern is the long-term loss of mechanical support of hillslope materials in the upper portions of the Waddell Creek, Scott Creek (including tributaries), Molino Creek, and San Vicente Creek. In areas where the fire intensity was more severe, hydrophobic soils may have developed from waxy substances released by plant materials into the soil making portions of the slope impervious to water.

Since these drainages are very steep, loose materials may mobilize into sediment laden masses during heavy rains, leading to the accumulation of debris that may flow downstream from the burned areas. The magnitude of post-fire damage will ultimately be determined by the intensity and duration of storms that impact the burn area, particularly during the winter of 2020-21. To help characterize the potential risk from changes in hydrology due to the fire, the United State Geological Survey (USGS) conducted a post-fire debris-flow hazard assessment for the CZU Lightning Complex that is available on-line (USGS website, accessed on September 17, 2020). The areas most vulnerable to flash floods and debris flows are located on private and State lands approximately 5-10 miles north of Cotoni-Coast Dairies, including the Waddell Creek and Scott Creek watersheds and their tributaries. Additionally, there are two moderate basin hazard ratings on private lands adjacent to the Cotoni-Coast Dairies known as the San Vicente Redwoods. The remainder of the burned area in the San Vicente Creek watershed is rated as low basin hazard. Burned areas to the south with low basin hazard ratings include the upper units of Henry Cowell Redwoods State Park and Wilder Ranch State Park. Damage to riparian habitats from emergency fire suppression and clearance for fuel breaks during the CZU Lightning Complex was avoided by keeping the number of access routes, the size of staging areas, and the total area of the response limited to the minimum necessary to respond to the fire. Fire suppression repair was completed in these areas to minimize long-term impacts to resources.

3.3 Biological Resources – Riparian Areas and Wetlands (Aquatic)

Riparian areas and wetlands are distinguished from upland vegetation types by having perennial water availability that is manifested at the surface as flow or ponding. Riparian areas are the interface between upland vegetation and wetlands. The riparian areas of C-CD consist of the six creeks including Molino, Agua Puerca, San Vicente, Liddell, Yellow Bank, and Laguna. These creeks originate in the Santa Cruz Mountains on the northeastern edge of C-CD and flow across C-CD towards the southwest and into the Pacific Ocean. Some portions of the creeks contain wetlands adjacent to the creek channel and on floodplains. Additional wetlands occur as perennial seeps and ponds, primarily located on Terraces 2 and 3. Significant wetlands include ponds on terraces at Molino, Liddell, and Yellow Bank. Additionally, off-channel ponds have been more recently constructed at Yellow Bank Creek.

Riparian areas and wetlands are important for the protection of water resources. Riparian areas and wetlands also contain sensitive vegetation and habitat types that support several BLM Special Status animal species. Wetlands often support a highly diverse plant and animal community and provide critical hydrologic and ecological functions that support ecosystem integrity. Properly functioning wetlands provide flood abatement, sediment retention, groundwater recharge, nutrient capture, and habitat for numerous plant and animal species (ESA 2001).

Riparian areas and wetlands both support hydrophytic (water loving) plant species, however, the plant species and vegetation types they typically support are fundamentally different. The riparian areas, including the creeks of C-CD, are subject to higher flow and have more seasonally variable flow than the wetlands. As a result of higher and more strongly variable flow, riparian area vegetation is dominated by riparian forest and woody plant species (**Table 3.3-1**). Coast live oak may occur on floodplains, arroyo willow typically occurs along the creek banks, and red alder typically occurs within the creek channel or immediately adjacent on the banks. In contrast to riparian areas, the water flow in wetlands of C-CD is generally lower and less variable. Wetland vegetation is typically dominated by herbaceous perennials including rushes, sedges, and cattails (**Table 3.3-2**).

Riparian areas and wetlands of C-CD have been highly altered as a result of historical logging, quarrying, and creek channel and pond modification. All of the creeks have significant channel modifications near their mouths at State Highway 1. The creeks have been effectively dammed by State Highway 1 and the flow has been directed through narrow culverts and tunnels. Historic creek channel modification at Yellow Bank Creek has resulted in channel incision and sedimentation and vegetation overgrowth of former freshwater wetlands there, particularly at lower Yellow Bank Creek. A series of off-channel ponds was constructed by BLM at Yellow Bank Creek in 2018. The ponds were constructed for California red-legged frog habitat in cooperation with the US Fish and Wildlife Service, PG&E, and the Santa Cruz Resource Conservation District. A wetland pond was constructed at Liddell Creek as mitigation for CEMEX activities (ESA 2001, 2004). This pond is in an early successional stage with good willow and emergent vegetation recruitment. Pacific chorus frogs are breeding in it and red-legged frogs have colonized it and are beginning to breed.

Water diversions, livestock grazing, and non-native plant species invasion represent additional current impacts to riparian areas and wetlands. A substantial quantity of water is diverted from upper Liddell Creek to supply the city of Santa Cruz. Water is also diverted from San Vicente Creek for domestic supply for the town of Davenport. Additional diversions of water from riparian areas and wetlands supplies water troughs for cattle at C-CD. The cattle corrals at Yellow Bank Creek are located directly adjacent to the historic creek channel and the floodplain wetlands there are heavily impacted by cattle. Cattle trailing impacts to riparian areas are also evident low on Terrace 2 between Agua Puerca Creek and Molino Creek. Non-native plant species including cape ivy have heavily invaded some riparian areas, particularly San Vicente Creek

and Liddell Creek. Old man’s beard (*Clematis vitalba*) has only recently begun to invade San Vicente Creek and is not yet known to have spread to any of the other creeks at C-CD. Localized riparian areas are trending towards an adverse condition due to concentrated impacts from livestock grazing and invasion from cape ivy. Wetlands are relatively stable.

Key indicators of riparian and wetland health include vegetative cover, structure, and composition; bank stability; coarse woody debris; pool dimensions; sediment loads/sedimentation; water temperature; and water chemistry (pH and soluble compounds). Monitoring of macroinvertebrates also provides a quantitative measure of wetland health.

Table 3.3-1. Riparian area and wetland vegetation types at C-CD. Compiled from vegetation types listed in ESA 2001 and 2004 and cross-walked to vegetation types described in Sawyer et al. 2009 and Barbour et al. 2007.

C-CD RMPA →	RIPARIAN AREAS			WETLANDS
ESA 2001, 2004 →	Coast live oak riparian forest	Red alder riparian forest	Central Coast arroyo willow riparian	Freshwater seep/ Freshwater wetland
Sawyer et al. 2009 & Barbour et al. 2007 ↓	<i>Quercus agrifolia</i> Woodland Alliance	<i>Alnus rubra</i> Forest alliance	<i>Salix lasiolepis</i> Shrubland Alliance	<i>Carex densa</i> Provisional Herbaceous Alliance
	<i>Quercus agrifolia</i> - <i>Salix lasiolepis</i>	<i>Alnus rubra</i> / <i>Salix lasiolepis</i>	<i>Salix lasiolepis</i>	<i>Eleocharis macrostachya</i> Herbaceous Alliance
		<i>Alnus rubra</i> / <i>Gaultheria shallon</i>	<i>Salix lasiolepis</i> / <i>Rubus</i> spp.	<i>Juncus lescurii</i> Herbaceous Alliance
				<i>Juncus (oxymetris, xiphioides)</i> Provisional Herbaceous Alliance
				<i>Juncus patens</i> Provisional Herbaceous Alliance
				<i>Schoenoplectus californicus</i> Herbaceous Alliance
				<i>Typha (angustifolia, domingensis, latifolia)</i> Herbaceous Alliance
				<i>Carex densa</i>
				<i>Eleocharis macrostachya</i>
				<i>Juncus lescurii</i>
				<i>Juncus xiphioides</i>
				<i>Juncus patens</i>
				<i>Schoenoplectus californicus</i>
				<i>Typha latifolia</i>

Forecast

Consensus of projected models for RCP 8.5, for C-CD through the year 2100, suggest a sharp increase in average annual temperature from 57°F to 63°F (+6.0°F; much warmer) and a modest increase in average annual precipitation of 3 to 5 inches (slightly wetter; Cal-Adapt 2019). The much warmer temperature, coupled with only a slight increase in precipitation, would result in substantially greater evapotranspiration rates and may ultimately result in decreased water supply to riparian areas and wetlands.

The BLM and CalFire utilize a Modified Suppression Plan for fire suppression activities within C-CD. This Modified Suppression Plan restricts withdrawals of water on C-CD to prevent impacts to sensitive species and restricts the use of fire retardant in proximity to waterways.

3.4 Biological Resources – Fish and Wildlife

Natural fauna at the C-CD can include any and all elements of a fairly intact ecological interdependent model including: herbivores (black-tailed mule deer); top predators (mountain lion); mesopredators (bobcat, coyote, grey fox, raccoon, badger); small herbivorous mammals (brush rabbit, dusky-footed woodrat, California ground squirrel, deer mice); small carnivorous mammals including mustelids (long-tailed weasel, striped skunk), moles and shrews, and bats.

Other vertebrate groups that play essential ecosystem roles are reptiles (northern and southern alligator lizard, coast and aquatic garter snake, southern pacific rattlesnake, yellow-bellied racer, western fence lizard, northwestern/southwestern pond turtle), woodland salamanders (Ensatina, arboreal salamander, Santa Cruz black salamander, California slender salamander), and aquatic-breeding amphibians (California red-legged frog, Sierra chorus frog, California newt, rough-skinned newt, Pacific giant salamander). Bird species include riparian forms, such as hermit thrush, Wilson’s warbler, black-headed grosbeak; grassland species such as grasshopper, white-crowned, golden-crowned and other sparrows; and habitat generalists such as California and spotted towhee, red-tailed hawk, red-shouldered hawk, Northern harrier, great horned owl, western screech owl, various woodpeckers including pileated woodpecker, American robin, brewer’s and red-winged blackbirds, and corvids such as scrub and Stellar’s jays. Fish include the salmonids: coho salmon, steelhead trout, non-anadromous rainbow trout; as well as other fish species, including: roach, hitch, stickleback, and freshwater sculpin. Invertebrates are also crucial faunal elements, and include both terrestrial and aquatic mollusks (snails, slugs and bivalves), and arthropods (crustaceans including crayfish, lepidopterans, coleopterans, odonates, orthopterans).

Absence of any of these expected species would indicate less-than-desired ecosystem function and biodiversity, but the absence of the remaining top predator (mountain lion) and the primary herbivore (black-tailed mule deer) would be expected to have a major cascading effects on many other wildlife species and flora of CCONM. Aquatic species such as steelhead and coho salmon are key indicators of functioning creeks, as are a host of aquatic invertebrates (odonata, hemipteran, coleopteran, neuropteran).

Coastal species present in southern Santa Cruz County such as California tiger salamander, common garter snake, or legless lizard are not known to be present and are not expected to occur at C-CD.

Fish and Wildlife by Habitat Association

Faunal indicator species addressed in the framework of mesohabitats defined in the Vegetation section. Although animal species do not necessarily exist in a one-to-one relationship with the defined vegetation associations, the vegetation model is generally useful for defining the habitats for which these species can indicate ecosystem function and the desired faunal diversity / historical condition.

Key indicators are here generally defined as species that are particularly sensitive to population declines following habitat degradation. Ecosystem indicators are other fauna which, when present, suggest either positive or negative ecosystem function. Native fauna are assumed to suggest positive ecosystem function, whereas nonnative species are assumed to indicate negative ecosystem function, by definition.

Mountain Lions (*Puma concolor*)

Mountain lions are expected in every habitat at C-CD and can be considered an “umbrella species” for the Property. The Puma Project is a well-known scientific research effort led by wildlife ecology expert, Chris Wilmers PhD, and colleagues from UC Santa Cruz that have been studying mountain lions and other wildlife for the last 12 years in this region including on C-CD. As noted in comments on the BLM plan

submitted by Professor Wilmers, PhD the property and the broader region are in the midst of a long-term transition from private property with very little human use, to publicly owned properties with potentially high levels of human use. The comments cite numerous studies, including Smith et al (2017) to demonstrate mountain lions fear people, which results in mountain lions fleeing their kill sites when humans are nearby and possibly killing up to 50% more deer a year as a result of this reduced feeding time at kills (Smith, Wang & Wilmers 2015), and increasing the energetic expenditure of mountain lions (Wang, Smith & Wilmers 2017).

The Puma Project research has also shown that mountain lions usually require a buffer of at 600 meters from human activity to site nurseries to raise their kittens (Wilmers et al. 2013). The undeveloped lands of the Santa Cruz Mountains are a mosaic of land holdings where human recreation is either allowed in some ways or prohibited. Given the documented impacts of human activity on animal communities and the already substantial land area in the Santa Cruz Mountains devoted to recreation, special attention should be given to maintaining large tracts of land with at least a 600-meter buffer from human trails. Especially important will be maintaining drainage bottoms and ridges that wildlife use most for efficient movement on the landscape with large buffers from human activity.

On April 16, 2020, the California Fish and Game Commission (Commission) provided notice that the Central Coast an evolutionarily significant unit (ESU) of mountain lions (*Puma concolor*) is a candidate species under the California Endangered Species Act (CESA). The Commission determined that the amount of information contained in the petition would lead a reasonable person to conclude there is a substantial possibility the requested listing could occur. Therefore, the Department has until April 2020 to prepare a written report indicating whether the petition to list the Central Coast ESU of mountain lions as threatened or endangered under the CESA is warranted. More information is available from the California Office of Administrative Law, reference Notice ID #Z2019-0716-03 and Z2020-0421-01.

Riparian Areas Key faunal indicators include pond turtles, foothill yellow-legged frogs, Pacific giant salamanders, Santa Cruz black salamanders, steelhead trout. Ecosystem indicators may include an intact stream invertebrate fauna, native freshwater molluscs, and native crayfish.

Riparian Areas and Wetlands

Key indicators include California red-legged frog and pond turtle. Ecosystem indicators include native species such as California and rough-skinned newts, Sierra chorus frog, Santa Cruz garter snake, sora rail, invertebrates including coleoptera (Ditiscidae), hemiptera (Belostomatidae), odonata (dragonflies and darners), copepods and eubranchiopods.

Annual grassland, and other open areas

Certain species will be ubiquitous to the unforested areas of C-CD, including western fence lizard, northwestern rattlesnake, and northern harrier.

Non-native ruderal patches / Annual grassland

This habitat is an early successional shrub and nonnative grass and forb community and will tend to have early successional generalist species such as brush rabbit, yellow-bellied racer, gopher snake, pocket gopher, coyote, bobcat, and a mix of native and nonnative invertebrates.

Native grassland

This primordial habitat may be expected to host a diverse community of native insects and rodents. One key indicator would be American badger.

Coastal scrub / Chaparral / ridgetop rock outcrops and barrens

Key indicators could be Blainville's horned lizard and night snake. Ecosystem indicators may include Gilbert's skink, California whiptail, Allen's and rufous hummingbirds.

Coast live oak woodland / Conifer forest

Faunal composition of coast live oak woodland and conifer forest habitats is relatively similar. Key indicators include arboreal salamander. Ecosystem indicators include deer and leaf-litter animals (California slender salamander and micro-arthropods).

Redwood Forest (Conifer forest)

Key indicators should include the marbled murrelet, band-tailed pigeon, banana slug, and *Ensatina*. Leaf-litter micro-arthropods are ecosystem indicators. It is important to note that Santa Cruz Mountains redwood habitats are depauperate with respect to the more extensive forests to the north. Key indicators of redwood forests north of San Francisco Bay, including northern spotted owl, white-footed vole, redbacked vole, clouded salamander, and torrent salamander and are not historically known from the Santa Cruz Mountains.

Current Status of Fish and Wildlife at C-CD

The undeveloped lands of the Santa Cruz Mountains are a mosaic of land holdings where human recreation is either allowed in some ways or prohibited. Given the documented impacts of human activity on animal communities and the already substantial land area in the Santa Cruz Mountains devoted to recreation, special attention should be given to maintaining large tracts of land with at least a 600-meter buffer from human trails. Especially important will be maintaining drainage bottoms and ridges that wildlife use most for efficient movement on the landscape with large buffers from human activity.

Intact leaf-litter fauna are expected in the oak woodland and redwood forest habitats but have not been sampled. Banana slugs have been recorded from the site but terrestrial snails have not been sampled. Healthy stream invertebrates assemblages are expected from the creeks but have not been sampled. Aquatic molluscs (snails and bivalves, both native and nonnative) and crayfish have not been sampled. California newts, rough-skinned newts, Santa Cruz garter snakes, northwestern rattlesnakes, and coast garter snakes have been positively recorded from C-CD. Many common amphibian species, including the pacific chorus frog, rough-skinned newt, *ensatina*, California slender salamander, and arboreal salamander and California newt occur or have the potential to occur on-site. The federally threatened California red-legged frog occurs on-site but other species of potential concern including foothill yellow-legged frogs and Santa Cruz black salamanders are not presently known from C-CD. Pacific giant salamanders are likely to occur but have not been documented. Dusky-footed woodrat and long-tailed weasel have been positively documented from C-CD.

The lack of development is conducive to a generally complete fauna composition. Processes that depress native fauna in otherwise undeveloped areas can include non-native species (i.e. brown cowbirds, bullfrogs, and house cats), as well as nonnative vegetation. Bullfrogs have not been documented in any drainage. House cats have been noted in the Mocettini Cheese House "Cheese Barn" and are expected in the environs of the town of Davenport and the small community on Laguna Creek and are expected to have a negative effect on riparian birds. Brown cowbirds are likely present and would also negatively impact riparian birds due to their brood parasitism.

The coastal watersheds and streams support cold water fisheries. Areas with limited or constrained riparian areas typically exhibit warmer temperatures, less stream stability, and lower numbers of native fish. The California Department of Fish and Wildlife (CDFW) and National Marine Fisheries Service (NMFS) published results of salmonid surveys in the San Vicente Watershed Salmonid Recovery Plan (RCD 2014).

Cold water fisheries are found in Molino, Agua Puerca, San Vicente, Liddell, Yellow Bank, Laguna, and ‘Y’ creeks. Each of these watersheds supports or has the potential to support steelhead and coho salmon, though there are substantial impediments or challenges for salmonid recovery in each creek (see Chapter 3 Sensitive Species - Coho and Steelhead for more information.)

Except for San Vicente Creek, C-CD streams are managed for wild fish stocks and maintained by natural recruitment. The National Marine Fisheries Service, though, has been stocking San Vicente Creek with coho salmon from a hatchery on nearby Scotts Creek since 2009. San Vicente Creek and Laguna Creek will remain the NOAA Fisheries focus for recovery of coho salmon populations (NMFS 2012).

Non-Native Species

Guideline 4 for the development of watershed management plans in the Recovery Plan for the California Red-legged Frog states that lands will be managed to control or eliminate non-native predators of CRLF (USFWS 2002). The non-native predators present in Santa Cruz County are American bullfrog (*Lithobates catesbeianus*), Western mosquitofish (*Gambusia affinis*), white crappie (*Pomoxis annularis*), Red Swamp crayfish (*Procambarus clarkii*) and signal crayfish (*Pacifastacus leniusculus*) (USGS 2019). None of these species except for *P. leniusculus* have been recorded at C-CD, but the American bullfrog has been recorded at Antonelli Pond in Santa Cruz, approximately ten miles east of the property. Nonnative bullfrogs have not been documented on C-CD.

An invasive mollusk, the New Zealand mudsnail (*Potamopyrgus antipodarum*), was recorded in Liddell Creek in August 2018 (USGS 2019). The New Zealand mudsnail is a species that can rapidly colonize an area, reaching very high densities (Alonso and Castro-Diaz 2012). However, the effects of this species are variable depending on the other co-occurring species (Bennett et al. 2015). USGS states that there are no current realized impacts of the New Zealand mudsnail on this creek, but it has the potential to negatively impact native invertebrate populations, reducing biodiversity and altering the carbon and nitrogen cycle of the invaded water body, which in turn could have indirect effects on the creek (Kerans et al. 2005; Alonso and Castro-Diaz 2012). No methods are known to be effective in removing the New Zealand mudsnail from a system once it has been introduced.

Raptors

C-CD also includes habitat of considerable value to raptors. Specific raptor species that utilize habitats present on and adjacent to this site include: golden eagle, hawks (red-tailed, red-shouldered, Swainson’s, ferruginous, and sharp-shinned), northern harrier, prairie falcon, American kestrel, owls (short-eared, long-eared, and burrowing), and loggerhead shrikes. Threats to raptors include poisoning, vehicle collisions, habitat loss, illegal hunting, illegal trading and egg collecting, power lines and towers, falconry, a reduced prey base, and disturbance of nesting and roosting sites.

Adult raptors have few predators and may live for up to 20 to 30 years. In common with other long-lived avian species, raptors have a low reproduction rate and high mortality among young birds. Approximately one-quarter of raptors survive their first year, and only half of these will reach maturity and raise their own young. With a reduction in adult survivorship due to the causes mentioned above, the population of the affected species declines as a result.

Forecast

Habitat fragmentation is a key consideration for managing lands for maintaining and increasing wildlife populations. In this area, the most relevant features, in terms of habitat fragmentation include: Highway 1 and other well-travelled paved roads, as well as adjacent residential neighborhoods and businesses.

In the absence of urban or industrial development, the wildlife profile at C-CD is unlikely to experience radical change. Lack of management of ponds could cause local extirpations of some species such as California red-legged frogs and California and rough-skinned newts. Regarding the forecast for coho salmon in this region, NOAA Fisheries notes: “the lack of demonstrably viable populations...and substantial gaps in the distribution of coho salmon throughout the CCC ESU [Central California Coast Evolutionarily Significant Unit] strongly indicate that this ESU is currently in danger of extinction.” (NMFS 2012).

The projected models (see section above Biological Resources – Upland Terrestrial Vegetation) indicate the likelihood of much warmer temperatures and only modest increases in precipitation. This could cause greater evapotranspiration and ultimately lead to decreased water supply in riparian area and wetlands which would have a negative effect on aquatic wildlife species.

3.5 Biological Resources – Special Status Species

Special status species include those plant and animal species federally listed as Threatened, Endangered, Proposed, or Candidate, as well as BLM, California Native Plant Society List 1B species, Federal and State of California sensitive plant and animal species. The BLM and the State of California coordinate activities related to the protection and enhancement of federally and state sensitive listed species. These actions include ongoing efforts to survey population levels, protect critical habitats, and determine potential areas for habitat restoration and recovery activities. The BLM also coordinates and consults with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) for activities related to the protection and enhancement of federally listed species on C-CD.

Historic documents discuss copious numbers of the salmonid species in the streams in this general area, which are indicative of long-term declines in the region as compared to current conditions. Recent data suggests salmonid restoration efforts are having a beneficial impact and that there are increasing fish numbers in waterways on-site.

Population size trends are not well known for most of the species on the property or in the surrounding areas. Research and management efforts are currently underway to improve understanding of the status of all listed species. Most of the relevant work documenting current species status has focused on salmonids and red legged frogs.

Migratory Birds

C-CD contains habitats for multiple species of migratory birds. The USFWS Migratory Nongame Birds of Management Concern that are known to occur on or nearby C-CD include the ferruginous hawk (*Buteo regalis*), short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), California thrasher (*Toxostoma redivivum*), loggerhead shrike (*Lanius ludovicianus*), mountain plover (*Charadrius montanus*), and tri-colored blackbird (*Agelaius tricolor*). Marbled murrelet surveys have been conducted extensively in the Scott Creek watershed, but no records exist for C-CD.

Amphibians

Overall frog and salamander numbers are declining and the cause, or causes, have not been determined. However, loss of habitat and habitat degradation, urbanization, pollution, and disease are factors that have been implicated in this decline. The federally threatened California red-legged frog occurs on-site.

California red-legged frog

C-CD is known to support populations of the Federally threatened California red-legged frog (CRLF) and is designated as critical habitat for the species. The US Fish and Wildlife Service's Recovery Plan for California Red-legged Frog (USFWS 2002) designates the entirety of C-CD as "core areas", with Davenport noted as a "hydrologic sub-area." C-CD provides a full range of habitat for the species, including aquatic breeding habitat and upland foraging and estivation habitat. To date the documented breeding habitat has been confined to artificial water bodies. Data from the most recent surveys suggests that CRLF attempts to breed in at least 10 ponds on or adjacent to the property but has only bred successfully in a subset of these in recent years (see Appendix A, Figure 10). Reasons for lack of breeding success are primarily the failure of artificial ponds to hold water long enough for larvae to mature, but in at least one pond breeding failure has been attributed to predation to native newts (BLM, unpubl. Data). CRLF that breed in C-CD ponds may utilize habitat beyond the boundaries of the property; conversely, frogs born off the property likely use upland habitat on C-CD. California red-legged frogs have not been documented in the flowing creeks on the property but likely use them as summer habitat. Stream habitat for CRLF requires large, still pools over 0.5 meters deep and canopy cover, such as from willows. Breeding habitat is enhanced by emergent vegetation such as cattails and tules. Main predators of CRLF include garter snakes, wading

birds such as herons and egrets, and raccoons. The median distance that CRLF travel from their breeding areas is 1.5 meters but frogs have been recorded to travel 1-2 miles via upland habitat at several sites, particularly during the wet season or as suitable habitat dries up (Fellers and Kleeman 2007; USFWS 2002).

Fish

Anglers are prohibited from fishing the coastal streams on C-CD by the CDFW. Habitat for these species has historically included most small coastal stream and rivers along the California coast. These waters seasonally represent spawning and rearing habitats.

Central Coast Coho ESU (Oncorhynchus kisutch)

The Central Coast Coho Evolutionary Significant Unit (ESU) includes all naturally spawned populations of coho salmon from Punta Gorda in northern California south to and including the San Lorenzo River in central California, as well as populations in tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River system. This species was listed as Threatened under ESA (October 31, 1996) and as Endangered for coho south of San Francisco Bay under the CESA. The Recovery Plan for the Evolutionarily Significant Unit of Central California Coast Coho Salmon was approved on September 01, 2012. The goal under this plan is to improve the viability of the Central California Coast ESU of Coho salmon, and the ecosystems upon which it depends, to the point that it no longer requires ESA protection.

Populations of central coast coho ESU at C-CD represent one of the last remnant populations of coho south of San Francisco Bay. Coho were first documented in San Vicente Creek in 1981 and scores of juvenile coho were found in San Vicente Pond (an agricultural water feature) in 2002. The National Marine Fisheries Service has been stocking San Vicente Creek with coho salmon from a hatchery on nearby Scotts Creek since 2009. Withdrawals from this pond were halted, and ongoing restoration and management of the pond is occurring in consultation with resource agencies. The City of Santa Cruz completes annual salmonid monitoring in Laguna and Liddell Creeks. In 2015 and 2016, juvenile coho were discovered in Laguna Creek. In 2018, juvenile coho salmon were discovered in Liddell Creek.

Six perennial streams on C-CD are considered critical habitat for coho salmon: Molino Creek, Ferrari Creek, San Vicente Creek, Liddell Creek, Yellow Bank Creek, and Laguna Creek (see Appendix A, Figure 11).

Central California Coast Steelhead DPS (Oncorhynchus mykiss)

The Central California Coast DPS (Distinct Population Segment) includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River, excluding the Sacramento-San Joaquin River Basin. This DPS was listed as threatened as Threatened under the ESA on August 18, 1997. The NMFS approved the Coastal Multispecies Final Recovery Plan for California Coastal Chinook Salmon, Northern California steelhead and Central California Coast steelhead in October 2016. The plan is based on the biological needs of the fish and provides the foundation for restoring the populations to healthy levels.

Presence of steelhead is confirmed at three creeks in C-CD (San Vicente, Laguna, and Liddell). Adult steelhead need access to spawning gravel in areas free of heavy sedimentation with adequate flow and cool, clear water. Steelhead utilize gravel that is between 0.5 to 6 inches in diameter, dominated by 2 to 3 inch gravel. Escape cover such as logs, undercut banks, and deep pools for spawning adults is also important. Juvenile steelhead prefer areas including woody debris accumulation such as logs or tree roots. Cover structures such as boulder clusters and root wads provide both summer and winter rearing habit. Surface turbulence (or white water) provides another source of cover during the summer months. As juvenile steelhead grow, pools become an important habitat component. The best pools for habitat are those with abundant escape cover in the form of large woody debris, undercut banks, root masses, and large boulders.

Cool, clean water is essential for the survival of steelhead during all portions of their life cycle. Elevated water temperatures (>70° F) can greatly impair growth rates of juvenile steelhead if adequate food is not available. Warmer water also holds less dissolved oxygen and increases a fish's susceptibility to disease. Within C-CD, San Vicente Creek contains the highest steelhead density, whereas steelhead were least abundant in Liddell Creek.

San Vicente Creek is a relatively productive steelhead stream providing adequate spawning and rearing habitat for the species. The CDFW has funded efforts to increase woody cover features and pool availability, and a concrete dam has been removed to increase available habitat. However, San Vicente Creek has generally high levels of sand and silt, and potentially high stream temperatures due to limited channel shading particularly at lower reaches. No limiting factors were identified during stream surveys of Laguna Creek, but the City of Santa Cruz operates a diversion upstream of the property that is permitted for unrestricted withdrawals. In Liddell Creek, sedimentation due to soil type and mining is reported to be the primary limiting factor to steelhead spawning habitat. Stream surveys in 2001 also detected young-of-the-year/yearlings in all other streams, but some of these were upstream of impassable or difficult-to-pass barriers indicating that some may be landlocked steelhead or rainbow trout.

Tidewater goby, *Eucyclobobius newberryi*

The tidewater goby is endemic to California and is distributed in brackish water habitats along the coast from Agua Hedionda Lagoon, San Diego County, in the south to the mouth of the Smith River (Tillas Slough), Del Norte County, in the north (Moyle et al. 1995). Although the species was originally believed to be restricted to low-salinity waters (Fed. Reg., 1994), tidewater gobies are capable of living in saline waters reaching over 50 parts per thousand (ppt) (Moyle et al. 1995). The Recovery Plan for the Tidewater Goby was approved on January 23, 2006.

The tidewater goby (*Eucyclobobius newberryi*) occurs in the downstream estuary of Laguna creek in the State managed portion of C-CD. It is not known to occur in the BLM managed portion of the property. Natural processes, including rising sea levels, may lead to the tidewater goby occurring within the BLM managed area. Management decisions should include potential downstream effects to this species. Large populations have been observed in lagoons ranging from fresh water (e.g., Soquel Creek and Pescadero Creek) to ocean salinities (Corcoran Lagoon and Moran Lagoon) (ESA 2001, 2004).

Plants

Special Status plant species are those that are Federally-listed, State-listed, or California Rare Plant Rank (CRPR) list 1B. There are currently no known Special Status plant species at C-CD.

San Francisco popcorn flower (*Plagiobothrys diffusus*; CRPR 1B.1), Santa Cruz clover (*Trifolium buckwestiorum*; CRPR 1B.1), Marsh scorzonella (*Microseris paludosa*; CRPR 1B.2), Choris's popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*; CRPR 1B.2), Santa Cruz microseris (*Stebbinsoseris decipiens*; CRPR 1B.2), and bent flowered fiddleneck (*Amsinckia lunaris*; CRPR 1B.2) have low to moderate potential to occur at C-CD due to occurrence of these species in the vicinity of C-CD and presence of some potential habitat for the species (ESA 2001, 2004; Calflora 2019; CCH 2019; CNDDDB 2019; Jepson eFlora 2019). Santa Cruz clover was found in the general area during surveys conducted in 2001, however, surveys in 2017 and 2018 did not locate any special status plant species at C-CD. Sandy soils (Zyante soils) which are the habitat of several rare and endangered plant species (Zyante flora) of the Santa Cruz Mountains, are not present anywhere on C-CD.

Threats to Sensitive Species

Habitat fragmentation can isolate populations and exacerbate challenges faced by special status species. In this area, habitat fragmentation has been most dominantly caused by Highway 1 and other well-travelled paved roads, as well as adjacent residential neighborhoods and businesses. Other deleterious impacts to

sensitive species habitat include invasive grasses and other non-native plants and the disturbance created by historic quarrying and logging and agricultural uses of the land. Waterway connectivity of onsite waterways to the ocean (and thus critical aquatic habitat) has also been adversely affected by the railroad trestle and the construction of Highway 1 and Swanton Road.

Proper public use site design and a better understanding of the current status of sensitive species utilizing the C-CD lands will help reduce the threats to the species. Research and management efforts are currently underway to improve the status of all listed species. Collaborative efforts with other organizations can synergistically improve understanding and management. Adaptive management strategies and techniques can help management to better respond to specific situations.

The BLM has been and will continue to evaluate and implement infrastructure options that are less threatening to wildlife. For example, as BLM installs improved models of signs and fence posts, raptors will not be at potential risk of perishing from getting their talons stuck.

Non-native plants, animals and pathogens can pose direct risks to sensitive species and indirect risks by altering their habitats. The BLM completed an invasive weed control plan (Appendix F).

Forecast

If appropriate restoration activities are undertaken, population sizes of certain species are forecast to increase. For example, removing barriers to fish passage in certain watersheds would be anticipated to increase salmonid numbers.

It is anticipated that invasive plants may increase in abundance on-site without effective treatment methods. This trend is anticipated to continue to adversely affect the wildlife species that depended on the habitats that were present on-site prior to invasive plant invasions.

Consensus of projected models for RCP 8.5, for C-CD through the year 2100, suggest a sharp increase in average annual temperature from 57°F to 63°F (+6.0°F; much warmer) and a modest increase in average annual precipitation of 3 to 5 inches (slightly wetter; Cal-Adapt 2019). The much warmer temperature, coupled with only a slight increase in precipitation, would result in substantially greater evapotranspiration rates and may ultimately result in decreased water supply to riparian areas and wetlands. Additionally, the altered temperature regime may fundamentally disrupt migration, mating, and reproduction cycles of fish and amphibians.

3.6 Cultural and Heritage Resources

For thousands of years people have called the land surrounding C-CD home and utilized the resources found there. Archaeological research in the surrounding coast suggest that California's coast was inhabited as early as 10,000 years ago. Regionally, evidence for the earliest occupation comes from an archaeological site located nearby in the Santa Cruz Mountains. This site indicates that it dates from 8,000 BPE (ESA 2001). Ethnographic accounts indicate the intentional use of wildfire to maintain grasslands to increase seed production and forage and attract game species such as black tailed deer. The nearby ocean and rivers produced marine resources that provided a rich source of food including mussels, salmon, and sea lions. Along the coast of California shell mounds dot the coastline, with remnants of mussel shell from such activities (Krober 1976). C-CD is located within the boundaries of the area inhabited by the *Cotoni* tribelet, part of the Ohlone peoples which occupied the land from the mouth of the San Lorenzo River, north to Año Nuevo Creek, and east as far as Bonny Doon Ridge (Milliken 1995) until sometime during the mission period (AD 1770-1835). Relatively dispersed resources in the area led to seasonal movement along the ecological zones and a relatively prosperous but sparse population density (ESA 2001). Pre-contact cultural resources in C-CD include sites where food gathering and preparation occurred, as well as lithics. The mission period was especially devastating to Native Americans, including the Ohlone. Cotoni, the first part of the monument unit's name reflects that this area was inhabited by the Cotoni tribelet of the Ohlone peoples.

The Mexican Era (1822-1848) followed Mexico's independence from Spain in 1821. Lands once controlled by the missions were divided into land grants. There are three ranchos that made up what is now C-CD. These were Rancho Arroyo de la Laguna, which was originally granted to Gil Sanchez in 1840, Rancho San Vicente was granted to Antonio Radriques in 1839, and Rancho Agua Puerco y las Trancas, granted to Ramón Rodriques and Francisco Alviso in 1843 (ESA 2001). Agricultural products such as tallow and hides were important exports to the United States of America, and were shipped from nearby coastal landings and dog holes (Dana Jr 1964; Delgado 1990).

The American Period (1850-1900) saw a dramatic population increase as people from all over the world traveled to California during the Gold Rush. Agricultural exports, such as produce, dairy, and hides, continued but other important resources were added. These included timber and lime which were crucial for the rapidly increasing cities and development projects created by the influx of people. Ships continued to be the primary method of transporting goods until railroads connected Santa Cruz to San Francisco. There were three landings that aided shipping in the area and were very influential to the development of the surrounding area. These landings are Waddell's Landing, William's Landing, and Davenport's Landing (Jensen 1976). Both the timber industry and lime industry heavily impacted the landscape through deforestation. Lime production required vast amounts of timber during the burning process in lime kilns. Historic examples of lime kilns that were used during this period are located nearby at Wilder Ranch State Park and at the campus of University of California Santa Cruz (Kindon 2018; Spitzer 2015). The "Coast Dairies" name recalls the historic namesake for the property when it was owned by a consortium of Swiss families that managed the property in absentia. The landscape of C-CD has been indelibly shaped by these past ranching and dairying operations as well as logging, farming, mining, and even homesteading. Historic sites related to this land-use legacy remain and help define the significance of this area.

C-CD is ecologically diverse and the topography is extremely varied. Soil types have a limited range but can have very different textures, granularities, and depositional scenarios resulting in a large range of soil compaction conditions that can vary throughout the Management Area. Consequently, any physical protection treatment for archeological resources will have different implementation requirements (e.g., hand vs. equipment installation). There are three types of projects that can be implemented for cultural resources management:

- Protection: For individual cultural properties or for classes of cultural properties requiring similar measures within a manageable spatial unit;
- Information: Such as inventory or test excavations where needed to provide a basis for refining evaluations and allocations to use categories;
- Interpretation: In which cultural properties are developed for public visitation.

In 2016, a Memorandum of Understanding (MOU) was signed between the BLM Central Coast Field Office and the Amah Mutsun Land Trust (AMLT) for C-CD. The purpose of this MOU was to facilitate the preservation and continuity of local Native heritage. The MOU provides assurances that the traditional ceremonies and cultural practices of the Amah Mutsun Tribal Band (AMTB) will continue within its traditional territory. Furthermore, the MOU fosters the perpetuation of Traditional Ecological Knowledge (TEK) and traditional resource and environmental management (TREM) through activities that include landscape and ethnobiological resource stewardship by AMTB members and AMLT affiliates as well as education, interpretation, research, and the sharing of AMTB cultural practices with tribal members and members of the public. The MOU reinforces that AMTB members are encouraged to engage in their traditional ceremonial activities, environmental resources stewardship, and resource gathering practices on public lands and to share elements of their traditions, culture, and history with visitors as appropriate. The involvement of AMTB members and the AMLT in the protection and preservation of shared public resources stimulates increased education opportunities and community involvement. The MOU does not preclude consultation with other California Indian people or affect BLM's option to enter into similar MOUs with other California Indian groups.

The BLM desires to have all cultural resources evaluated and managed. In order to achieve this goal a classification system was created for allocating allowable uses at each site (**Table 3.6-1**). Indicative factors to describe resource conditions are principally based on observed site characteristics and site monitoring by BLM staff and trained Volunteers (California Archaeological Site Stewardship Program). The BLM will continue to use opportunities to enhance existing partnerships with local tribal community and interested public, specifically non-Federally recognized individual Costanoan/Ohlone California Indians, the Amah Mutsun Tribal Band, local community members of Davenport and Bonny Doon, avocational historical societies, and BLM Volunteers who have successfully graduated from the California Archaeological Site Stewardship Program (CASSP).

Table 3.6-1. BLM Cultural Resource Use Allocations and Desired Outcomes Matrix

Use Allocation	Desired Outcome
Scientific use	Preserved until research potential is realized
Conservation for future use	Preserved until conditions for use are met
Traditional use	Long-term preservation
Public use	Long-term preservation, on-site interpretation
Experimental use	Protected until used
Discharged from management	No use after recordation; not preserved

Cultural resources in the area are diverse due to the long inhabitation and use of C-CD lands. Currently there is limited cultural resources research being conducted. Pre-contact sites that are present include chert manufacturing, bedrock mortar, potential habitation sites, and shell midden. Most of the known remaining pre-European contact era ("prehistoric") cultural sites are fair to poor, primarily due to the impacts of historic mining exploration and development activities or ranching/homesteading during the Mexican and American periods.

Historic sites include the Mocettini Cheese House used during the cheese production and aging process, other dairy industry sites including a pole barn and cement features such as troughs and walls, historic

habitation sites, historic era fencing from dairy and mining activities, and part of the old coast road (part of which was re-routed and became California Highway 1) runs through the landscape. These sites, especially those with currently standing infrastructure are sensitive to degradation and collapse through natural a natural aging process and unauthorized visitation/vandalism.

The importance of this area to Native Americans as a place to continue with traditional uses as identified through: clusters of pre-contact sites for activities such as food production; sacred sites; and vegetation types that have traditionally been used by the Ohlone such as hazelnut. The BLM would manage RMZ4 as part of this management plan in collaboration with the Amah-Mutsun Land Trust.

A BLM Class I inventory was conducted in January 2020 for the entire property and a Class III inventory was completed for trails proposed under Alternative D, Phase I. A Class I Inventory uses existing data from cultural resource inventory reports and files to help identify known properties. This serves to look at cultural resources from a landscape level and help determine if additional, more intensive surveys are appropriate in specific areas. Approximately 35% of the property was previously surveyed at a Class I Inventory prior to 2020. AMLT has worked with the BLM to develop a cultural resources sensitivity model for the study area. All areas with high to moderate sensitivity for cultural resources have been subject to pedestrian inventory either at a Class II (reconnaissance) level or Class III (intensive) level.

A BLM Class II Inventory uses statistically based surveys that aim to aid in understanding the properties and distribution of cultural resources in an area. Approximately 2% of C-CD has been surveyed through a Class II Inventory at this time. All areas that would be subject to trail construction, trailhead development, and other high levels of public use under the proposed land use plan have been inventoried as the BLM Class III level. Class III Inventories comprise of intensive field surveys to identify historic properties, consistent with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. Using professional standards, surveys conducted under a Class III Inventory focus on identifying and recording all historic properties within the determined Area of Potential Effect. An estimate of 20% of the entire property has undergone an intensive cultural resource inventory at a BLM Class III. Since a BLM Class III Inventory for the whole property has not been conducted at this time there is the potential to encounter previously undocumented cultural resources in areas that have not been intensively inventoried. Future planning actions will be subject to project specific review, including background record searches, field inventory, tribal consultation, etc.

Forecast

Recommended actions and desired outcomes for the known cultural resources on C-CD encourage the use and monitoring through a unique partnership with the AMLT.

Other opportunities may include the expansion of the partnership with Agricultural History Project to potentially restore or interpret stand-alone structural elements or objects of the Mocettini Cheese House.

3.7 Air Quality

C-CD is located in the North Central Coast Air Basin (NCCAB). The NCCAB is composed of Monterey, Santa Cruz, and San Benito counties and covers an area of more than 5,100 square miles. In the summer, the Pacific High-pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. In the fall, north or east winds can develop, transporting pollutants from either the San Francisco Bay area or the Central Valley into the NCCAB. During the winter, air flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. The average annual temperatures in degrees Fahrenheit are relatively stable and range from winter lows in the upper 30s to summer highs in the middle 70s.

Federal and state standards have been established for ozone, CO, NO₂, sulfur dioxide (SO₂), lead, and fine particulates (PM₁₀ and PM_{2.5}). **Table 3.7-1** summarizes the current federal and state standards for each of these pollutants. Standards have been set at levels intended to protect public health. California standards are generally more restrictive than federal standards. Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or in “nonattainment.”

As shown in the table below, the NCCAB is in attainment or unclassifiable status for all federal ambient air quality standards (AAQS). For state AAQS, the NCCAB is currently in nonattainment status for respirable particulate matter (PM₁₀), and transitional nonattainment status for ozone. An area is designated transitional nonattainment if, during a single calendar year, the state standard is not exceeded more than three times at any monitoring location within the district.

Table 3.7-1. Federal and State standards for air pollutants.

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone (O ₃)	1 Hour	Nonattainment - transitional	No federal standard
	8 Hour		Attainment
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Nonattainment	No federal standard
	24 Hour		Unclassified ¹
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	Attainment	Attainment
	24 Hour	No state standard	
Carbon Monoxide (CO)	8 Hour	Unclassified	Unclassified/Attainment
	1 Hour		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	No state standard	Attainment
	1 Hour	Attainment	No federal standard
Lead	Calendar Quarter	No state standard	Attainment
	30 Day Average	Attainment	No federal standard
	Rolling 3-month Average	No state standard	Attainment

¹ Unclassified; indicates data are not sufficient for determining attainment or nonattainment.

Attainment = Meeting air quality standards

Nonattainment = Exceeding air quality standards

Source: CARB 2015, USEPA 2017

Populations more sensitive to air pollution than others include children, the elderly, and persons with respiratory diseases. Scattered rural residences are located adjacent to C-CD, including the farm building complexes. According to the Monterey Bay Air Resources District's (MBARD) Guidelines, air quality impacts occur if projects emit more than 82 lbs/day of PM10 nearby or upwind of sensitive receptors. Ozone impacts during construction are less likely to occur because projects using typical construction equipment are accommodated in the emission inventories of federally and state-required air plans.

Forecast

The atmospheric conditions on the North Coast of Santa Cruz County are expected to be consistent with current conditions during the life of the plan (10-15 years). The long-term fluctuation in average annual precipitation and average annual temperature is likely to result in increased aridity with more frequent and severe droughts (Field et al. 2016). The current greenhouse gas emissions scenario model is Relative Concentration Pathway (RCP) 8.5 (Cal-Adapt 2019). Consensus of scientific models for RCP 8.5, for C-CD through the year 2100, suggest a sharp increase in average annual temperature from 57°F to 63°F (+6°F; much warmer) and a modest increase in average annual precipitation of 3 to 5 inches (slightly wetter; Field et al. 2016; Thorne et al. 2016 Beck et al. 2018; Cal-Adapt 2019).

3.8 Geology

Geologic Setting and Stratigraphy.

The C-CD property is completely included in the region of California commonly referred to as the Coast Ranges geomorphic province (CGS 2002). The Coast Ranges geomorphic province is characterized by a series of northwest trending ridges and valleys subparallel to the San Andreas Fault. Figure 13 in Appendix A illustrates the formations of C-CD – which range in age from the Cretaceous through the Holocene (Clark 1981; Brabb 1997). The oldest, basement rocks of C-CD are crystalline plutonic and metamorphic rocks of the Salinian Block. These include quartz diorite and marble. Between the Cretaceous (136 MYA) and Late Miocene (5 MYA), the area of C-CD was located beneath the Pacific Ocean. Within the marine environment, sedimentary rock formations were deposited including from oldest to youngest - Butano Sandstone (Eocene), Lompico Sandstone (Middle Miocene), Monterey Formation (Middle Miocene), Santa Margarita Sandstone (Late Miocene), and Santa Cruz Mudstone (Late Miocene). With tectonic uplift of Ben Lomond Mountain, all of these geologic formations were raised above sea level. As tectonic uplift progressed through the Pleistocene (2.5 – 0.5 MYA), wave action along the coastline cut terraces into the Santa Cruz Mudstone and deposited additional geologic material of both marine and terrestrial origins, creating the Coastal Terrace Deposits and Lowest Emergent Coastal Terrace Deposits. Tectonic uplift continues to date at an interpreted rate of between 0.21 m/ky and 0.44 m/ky (Weber and Allwardt 2001). Finally, in most recent geologic time (Holocene; 12,000 YBP to present), erosion has downcut through all of the uplifted and exposed geologic formations, creating Alluvial Deposits, Undifferentiated, along the creek bottoms.

The most easily observed geomorphic feature by the general public at C-CD is a series of three stair-step marine terraces (ESA 2001, 2004). Terrace 1 is elevated about 100 feet above sea level, Terrace 2 is elevated about 300 feet, and Terrace 3 is elevated about 600 feet. It is difficult to determine whether climatic fluctuation or tectonic uplift was predominantly responsible for formation of the terraces (ESA 2001, 2004). Marine terraces form by wave action that erodes away a relatively flat bench. Formation of these terraces is associated with high-energy erosion of a sheer sea cliff and deposition of near-shore marine sediments on the newly eroded bench. As sea level falls or tectonic forces uplift the land surface, the wave-cut platform is raised above sea level and exposed. This uplift also exposes the near-shore sediments that were deposited on the bench during its formation.

Terrace 1, the lowest and youngest terrace, is located at the level of State Highway 1 and Davenport. Only small portions of Terrace 1 are contained within C-CD. Terrace 2 and 3 are well-represented within C-CD. The terraces are incised and eroded by the major drainages of Molino Creek, Agua Puerca Creek, San Vicente Creek, Liddell Creek, Yellow Bank Creek, and Laguna Creek. Terrace 3 is heavily incised and dissected by drainages with only relatively small areas of the flat terrace remaining.

The topographic landscape of the C-CD property is geologically dynamic with aforementioned marine terraces being evidence of the ongoing up-lift of the Santa Cruz Mountain. The current estimated rate of uplift for the Santa Cruz Mountains is between 0.8 and 1.0 cm/yr can be found in numerous publications related to the 1989 Loma Prieta earthquake and Dr. Gerald Weber (UCSC Professor of Geology (emeritus)) has provided an excellent discussion on the rate of uplift for the specific marine terraces located at C-CD in his published field trip for the area (Stoffer and Gordon 2001).

Cave and Karst Resources. The City of Santa Cruz Water Department developed an inventory of karst related rock formations in western Santa Cruz County. The karst study area includes the entire C-CD property and suggest potential for known karst structures in the Laguna Creek watershed (Nolan Associates 2016).

Forecast

Geology at the landscape scale is not significantly affected by land use. Locally, large volumes of limestone and marble were removed from the Bonny Doon quarry (uplands of Liddell Creek) and large volumes of shale were removed from the San Vicente quarry (uplands of San Vicente Creek) for cement production. Relative to the total volume of material contained in the geologic formation, the total quantity of rock removed through quarrying was relatively small. Deed restrictions for C-CD prohibit future quarrying and mining.

Earthquakes on nearby fault lines could produce strong ground movements at C-CD within the next 30 years. Such earthquakes may result in block-slides on the steeper portions of the Santa Cruz Mudstone formations.

3.9 Water Resources

The topography of C-CD, is a series of narrow, steep-sided canyons cut by Liddell, San Vicente, and other creeks into the terraced southwestern slope of Ben Lomond Mountain. Elevations range from near sea level to over 800 m along the crest (Clark 1981). There are six perennial streams at C-CD including Molino Creek, Agua Puerca Creek, San Vicente Creek, Liddell Creek, Yellow Bank Creek, and Laguna Creek. All six of these streams are spring-fed perennial streams and are therefore groundwater dependent systems. As a result, any changes in the regionally supportive groundwater system will have a direct influence on the quantity and quality of the summer baseflows in these streams.

Several of these streams have their watershed entirely or almost entirely on the Property. The larger streams, Laguna Creek and San Vicente Creek, however, have watershed areas that extend beyond C-CD (**Appendix A, Figure 2**). The largest of the watersheds, San Vicente, is about 10 square miles. Hydrology on the property, like most of central California, is marked by winter rains and summer drought. The streams tend to exhibit “flashy” (rapidly rising and falling) winter flows in response to storm events. Stream flow and storm events are intensified by the orographic effect of the Santa Cruz Mountains located to the west. As the dry season progresses and the soil dries out, the streams continue to be fed by seeps and springs.

Average annual precipitation ranges from approximately 40 inches in areas near the coast to nearly 60 inches at the headwaters of the drainages located within C-CD. The upstream migration and spawning of salmonids, and the large flood events that change the form of stream channels, both occur in late fall through early spring. Rainfall during the months of December, January, February, and March have the greatest effect on salmonid migration and spawning.

Precipitation recharges groundwater throughout the watersheds. It is estimated that a total available storage volume of 146,995 acre-feet (181,315,665 m³) is derived for the groundwater system supporting C-CD. This estimate is based on an assumed watershed surface area of 34.8 square miles (90.1 km²) or 22,272 acres (9,013 hectares), plus an average saturated thickness of 330 feet (100 meters), and void volume of two (2) percent of the rock mass.

Due to the geologic material in which the groundwater is held (primarily fractured granitic and metamorphic facies) – the character of the water quality at C-CD would be expected to be one of low dissolved solids (< 500mg/L Total Dissolved Solids (TDS)).

Molino Creek

Molino Creek represents the northern-most stream located at C-CD and empties into the Pacific Ocean at Scotts Creek Beach. Bank undercut has resulted in localized failures of the section of the creek crossing under Swanton Road. Within the BLM managed portion of C-CD, Molino creek is blocked to salmonid migration by an on-channel reservoir whose outlet culvert is located 6 to 7 feet above the downstream channel. The most inland portion of the stream within becomes increasingly narrow with dense riparian vegetation including alders and willows and has a substrate predominantly cobble substrate. Molino Creek has a relatively small watershed which does not appear to produce sufficient storm run-off to maintain optimal water depths for salmonid spawning throughout the spring, even with the upstream on-channel reservoir being operated as a flow-through system.

About 84 percent of the 1.5 square mile watershed above the Molino Creek monitoring station is underlain by the Santa Cruz Mudstone formation. The Santa Margarita Sandstone underlies about 7 percent of the watershed. The outcrop of the Santa Margarita Sandstone lies along the upper 5,000 feet of Molino Creek. However, there is a ribbon of quartz diorite rock along the stream channel that is about 2,000 feet long and within the sandstone outcrop. The Santa Margarita Sandstone is very erosive if disturbed. Exposures of the

sandstone in the creek have the potential to provide sediment directly to the creek. The highest point in the watershed is 1,690 feet. Eighty-five percent of the watershed lies below 1,030 feet in elevation (Clark 1981).

Agua Puerca Creek

Agua Puerca is also located in the northern portion of C-CD and enters the ocean at Davenport Landing after flowing through the U.S. Abalone facility. The mouth of the creek consists of an old concrete flume which was previously used by a fish farm to guide returning adult salmon back into the farm. The headwaters of Agua Puerca Creek occur within C-CD.

With respect to the geomorphologic and biotic conditions of the stream, Agua Puerca Creek appears to provide adequate habitat for a small salmonid population although the presence of difficult-to-pass and/or impassable migration barriers are likely to be limiting factors. As is the case with Molino Creek, the small watershed size of Agua Puerca Creek may also limit water availability.

San Vicente Creek

San Vicente Creek flows through the town of Davenport on its way to the ocean. In order to pass from the ocean to C-CD, salmonids must pass through the railroad crossing (an artificial bore through bedrock) and the Highway 1 crossing (a box culvert). These crossings do appear passable to salmonids during at least parts of the migration season.

Generally high levels of sand and silt in the creek may create sub-optimal salmonid conditions, and potentially high stream temperatures due to limited channel shading, particularly in the lower reaches. The source of sedimentation was not identified, but old quarries located upstream of C-CD may contribute to these conditions.

Eighty-five percent of the watershed has an elevation of less than 1,960 feet. About 64 percent of the watershed is in the 0-10 percent slope class. Only about 5 percent of the watershed has slopes in excess of 20 percent.

Approximately 61 percent of the watershed is underlain by quartzdiorite, a dense rock that is similar in chemical composition and appearance to granite. Only about 10 percent of the watershed is underlain by the Santa Cruz Mudstone. Therefore, most of the rocks transported by San Vicente Creek will have a density of close to that of solid rock. Consequently, eggs laid by salmonids will be less likely to be washed away by flood events compared to eggs laid in a stream dominated by mudstone. In general, a watershed dominated by igneous or metamorphic rocks supplies bed material to its streams that are more suitable for salmonids than a watershed dominated by sedimentary rocks. About 23 percent of the watershed is covered by the Santa Margarita sandstone. However, most of the sandstone is located in the upper watershed on slopes less than 10 percent. The low slope of the Santa Margarita sandstone helps minimize its susceptibility to erosion. Continuous large slide complexes cover both sides of upper San Vicente canyon.

Liddell Creek

Liddell Creek is located south of Davenport and enters the ocean via Bonny Doon Beach and consists of three distinct forks, the main, east, and west branches.

The mouth of the main (middle) branch passes across Bonny Doon Beach after travelling through a bedrock bore (reinforced with concrete) to pass under both Highway 1 and the railroad tracks. The outfall of the tunnel contains two concrete barriers partially closing the opening, presumably to prevent sand build-up inside the bore. This crossing appears to be marginally passable to migrating salmonids during certain hydrologic conditions. Baffles and a fish ladder were constructed in 2001.

All three branches of Liddell Creek are exposed to severe sedimentation, which appears to be the primary limiting factor in this watershed, although the dense canopy cover has also been shown to limit the quality of spawning habitat for salmonids. Contributors to sedimentation include road and bank failure, as well as historic quarry operations. The City of Santa Cruz, which holds senior water rights for Liddell Creek, voluntarily maintains bypass flows sufficient for all salmonid life-stages in Liddell Creek to comply with California Department of Fish and Wildlife regulations.

The highest point in the Liddell Creek watershed has an elevation of about 1,300 feet. Eighty-five percent of the watershed has an elevation less than 660 feet. About 48 percent of the watershed is in the 0-10 percent slope class. Slightly more than 18 percent of the watershed has slopes greater than 20 percent.

The Santa Cruz Mudstone formation underlies about 58 percent of the watershed, and quartz diorite about 16 percent. The bed material in West Liddell Creek can therefore be expected be a mixture of normal rocks derived from the quartz diorite, and density rocks derived from the Santa Cruz Mudstone.

The Santa Margarita Sandstone formation covers about 14 percent of the watershed. Most of the sandstone is on the top of the ridge and is in the 0-10 percent slope class. However, a ribbon of sandstone crosses West Liddell Creek in the vicinity of the conveyor belt. A ribbon of sandstone follows the creek for about 1,600 feet and joins the ribbon that crosses the creek at about the conveyor. The Santa Margarita Sandstone is highly erosive if disturbed and breaks down quickly into sand. The exposure of sandstone along the creek can be expected to contribute some sand to the stream. However, most of the Santa Margarita is away from the stream on the ridges and has a low slope so may not contribute much sand to the creek.

Yellow Bank Creek

Yellow Bank Creek is located south of Davenport between the Liddell Creek and Laguna Creek watersheds. To reach the ocean, the creek passes through two bore tunnels under the railroad tracks and Highway 1, as well as an open portion between the two.

The primary limiting factor in this watershed is the presence of two reservoirs upstream of Highway 1, which appear to be impassable. Upstream of the reservoirs, the watershed provides adequate spawning and rearing habitat.

Laguna Creek

Laguna Creek is located along the southern boundary of C-CD and empties into the Pacific Ocean at Laguna Beach. Prior to reaching the ocean, Laguna Creek meanders through Laguna Creek Marsh. A culvert beneath Highway 1 connects the creek to the ocean.

The section of creek surrounding the culvert provides very good rearing habitat within a relatively deep channel containing an abundance of undercut banks. Upstream from the culvert, the creek becomes considerably narrower and shallower, but provides potential spawning habitat. More upstream, fine substrate materials increase. The City of Santa Cruz operates a diversion site permitted for unrestricted withdrawals upstream of C-CD. The City voluntarily maintains bypass flows sufficient for all salmonid life-stages to comply with California Department of Fish and Wildlife regulations.

Additional details about the surface water features are discussed in the Coast Dairies Long-Term Resource Protection and Use Plan (ESA 2001).

Existing Permitted Water Uses

The Coast Dairies Land Company retained the water rights on C-CD. Future use and allocations would be subject to the review and approval of appropriate local, State, and Federal agencies. Numerous wells, water diversions, and associated infrastructure have been located on C-CD. Notably, the County of Santa Cruz

manages a water intake system immediately upstream of C-CD in the San Vicente watershed that provides domestic water for the town of Davenport. There are also several ponds and water impoundment areas that provide aquatic habitat for listed species on the property.

The City and County of Santa Cruz

The City of Santa Cruz owns the parcel adjacent to C-CD where Liddell Spring is located. They procured the water rights surrounding Liddell Spring, Liddell Creek, and associated water rights, including downstream riparian rights in 1913 and regularly use Laguna Road on C-CD to monitor the associated utilities. The City's easement also includes a water pipeline and access to the waterline for maintenance purposes. This includes an access road with a 10-foot right of way around the pipes. Water rights on C-CD are discussed in Section 5.1 of the Coast Dairies Long-Term Resource Protection and Use Plan (ESA 2001).

Additional research on existing water use and diversions on C-CD was compiled by the Santa Cruz Resource Conservation District in 2013. These studies are not comprehensive, but they indicate demands for water resources posed by development could be a challenge based on water availability in the region.

Forecast

The groundwater system sustains the flora and fauna in the area and base flows of the perennial drainages. Residential development up-gradient of the C-CD and other future demands for the groundwater in the watersheds of C-CD may result in decreased base flows of perennial streams.

3.10 Soil Resources

Soils are the foundation of terrestrial ecosystems. The soil series present at C-CD are largely determined by the geology (parent material), topography, local climate, and vegetation. Soils provide important functions of a substrate for organisms to anchor to and a supply of water and nutrients.

Soil series on the terraces include Elkhorn, Watsonville, and Pfeiffer (Bowman and Estrada 1980; SoilWeb 2019). The soil series on steep slopes of the drainages that incise the terraces is dominated by Bonnydoon. Soil series of the uplands in the woodlands and forest includes Santa Lucia, Ben Lomond, Lompico, and Maymen. Soils of the grassland terraces and woodland and forested uplands are deep – greater than 3 feet – in comparison to that of coastal scrub which are very shallow – less than 1 foot. The soil texture across C-CD is predominately loam and varies from sandy loam to clay loam. The forest soil series Santa Lucia, Ben Lomond, Lompico, and Maymen contain thick A horizons (1 foot) with high organic matter content and well-developed, deep B horizons (2 feet).

Soil series of the quarries is most closely allied to the poorly developed, very shallow, and well-drained (xeric) Bonnydoon soil series. The deep A and B horizons of the Santa Lucia, Ben Lomond, Lompico, and Maymen soil series that were originally present at the sites of the Bonny Doon limestone and San Vicente shale quarries was stripped off and side cast down the hillslopes to expose the bedrock for quarrying. Removal of the topsoil effectively reset the soil formation point back to zero. Natural soil formation processes would require a few to several centuries to rebuild the soil conditions back similar to Santa Lucia, Ben Lomond, Lompico, and Maymen. Deed restrictions for C-CD prohibit future quarrying and mining. Reclamation of the Bonny Doon quarry on the property is ongoing through a lease agreement with CEMEX. There are not currently any reclamation efforts underway for the San Vincente quarry, as abandonment of this site predates current regulations regarding mine and quarry reclamation.

Due to the superficial nature (a thin veneer) of soils over geology (parent material; bedrock), soils can be greatly affected by land use. Soils are the foundation of ecosystems, serving a critical ecological support function of substrate for anchoring and to provide nutrient and water supply (soil moisture) for plant growth. Removal of vegetation can expose soils, resulting in soil erosion and loss of the terrestrial ecosystem function, as well as negative effects to aquatic ecosystems through sedimentation. The erosion hazard of the banks and steep hillsides immediately adjacent to the perennial creeks is rated as high (ESA 2001, 2004). The erosion hazard of well-vegetated coastal scrub, woodland, and forest slopes is rated as moderate. The erosion hazard of coastal grasslands on the gently sloping terraces is rated as low.

Key indicators of soil health include vegetative cover and lack of erosion.

Forecast

Overall, the current condition of soil resources across the entire C-CD is good, except for the Bonnydoon and San Vicente quarries. The deep A and B horizons of the Santa Lucia, Ben Lomond, Lompico, and Maymen soil series that were originally present on the quarry sites were stripped off to expose the limestone and shale bedrock (**Figures 3.10-1 and 3.10-2**). Removal of the topsoil effectively reset the soil formation start point to zero. This has resulted in the remaining, drastically disturbed soil to be most closely allied to the poorly developed, very shallow (low water holding capacity) and well-drained (xeric) Bonnydoon soil series. Due to the low water holding capacity of the Bonnydoon soil series, it is generally only capable of supporting coastal scrub vegetation. Natural soil formation processes would require a few to several centuries to rebuild the soil conditions back similar to Santa Lucia, Ben Lomond, Lompico, and Maymen. Active soil rebuilding through deep amendment with organic matter (surface apply and deep rip 1 to 2 feet)

would greatly accelerate restoration of soil function similar to Santa Lucia, Ben Lomond, Lompico, and Maymen to support conifer forest revegetation.



Figure 3.10-1. Limestone and marble quarry tailings pile in Liddell Creek watershed. Lat. 37.022618, Lon. -122.157659.



Figure 3.10-2. Shale quarry pit in the San Vicente Creek watershed. Lat. 37.029337, Lon. -122.172955.

The trajectory of soils under the current management regime is projected to remain stable. Although the soils within the quarries are drastically disturbed and shallow, the herbaceous and shrub vegetative cover is sufficiently high and the infiltration rate of the underlying shale is sufficiently high, due to the high porosity and fracturing, so as to prevent significant soil erosion. The natural rate of soil formation would require a few to several centuries to rebuild the soil conditions back similar to Santa Lucia, Ben Lomond, Lompico, and Maymen. Active soil rebuilding through deep amendment with organic matter (surface apply and deep rip) would greatly accelerate restoration of soil function similar to Santa Lucia, Ben Lomond, Lompico, and Maymen to support conifer forest revegetation.

3.11 Paleontological Resources

Paleontological records search and literature search. The University of California Museum of Paleontology (UCMP) is the major repository for fossils of California and the western US. UCMP maintains a publicly accessible, online database of their fossil collections (<https://ucmpdb.berkeley.edu/>). A UCMP database search for all fossil specimen records from Santa Cruz County was conducted. Each record was then evaluated to determine if the fossil specimen locality occurs directly on C-CD or occurs on a rock formation present at C-CD. A literature search revealed the following publication important to assessing the presence and relative abundance of specific fossil types at C-CD: Clark, J.C. (1981) Stratigraphy, paleontology, and geology of the central Santa Cruz Mountains, California Coast Ranges. USGS Professional Paper 1168. Both UCMP records and the USGS publication (Clark 1981) were used to compile fossil type and relative abundance by rock formation present at C-CD (**Table 3.11-1**). This data table was used to classify the PFYC of each rock formation present at C-CD.

Table 3.11-1. Fossil type presence, relative abundance, and resulting PFYC Class for each rock formation present at C-CD. Geologic formations based on Clark (1981) and Brabb (1997). Fossil type presence and relative abundance based on UCMP (2019) and Clark (1981)

Geologic formation	Age (oldest → youngest)	General rock type	Specific rock types	Depositional environment	Fossil Type and Abundance							PFYC
					Plant - Pollen	Plant - Stems; Leaf impressions	Microfossils - Diatoms; foraminifera	Invertebrate - Mollusks, echinids	Vertebrate - Fish scales; shark teeth	Vertebrate - Fish bones	Vertebrate - Mammal bones	
Salinian Block	Cretaceous	Igneous	Quartz diorite	.	.	.	.	.	.	.	.	1
Salinian Block	Cretaceous	Metamorphic	Limestone, Marble	Marine	.	.	.	.	.	.	.	3
Butano Sandstone - Lower Sandstone Member	Eocene	Sedimentary	Sandstone	Marine	.	O	C	.	.	.	.	3
Lompico Sandstone	Middle Miocene	Sedimentary	Sandstone	Marine	.	.	C	C	.	.	.	3
Monterey Formation	Middle Miocene	Sedimentary	Mudstone, Siltstone	Marine	A	C	A	O	O	O	.	5
Santa Margarita Sandstone	Late Miocene	Sedimentary	Sandstone	Marine	.	.	A	O	.	O	R	5
Santa Cruz Mudstone	Late Miocene	Sedimentary	Mudstone	Marine	A	.	A	O	O	.	.	3
Coastal terrace deposits	Pleistocene	Sedimentary	Semi-consolidated alluvium	Marine	.	.	.	.	.	.	.	3
Lowest Emergent Coastal Terrace Deposits	Pleistocene	Sedimentary	Semi-consolidated alluvium	Marine	.	.	.	A	.	.	.	3
Alluvial Deposits, Undifferentiated	Holocene	Sedimentary	Alluvium	Terrestrial	.	O	.	.	.	.	.	2

R - Rare **O** - Occasional
C - Common **A** - Abundant
 . - Not observed/absent

Potential Fossil Yield Classification (PFYC). Based on the data compiled in **Table 3.11-1**, the Potential Fossil Yield Classification system protocol (BLM 2016) was used to assign a class based on the relative abundance of significant paleontological resources and their sensitivity to adverse impacts. Significant paleontological resources are defined as the presence of vertebrate fossils or scientifically significant invertebrate or plant fossils.

Very high potential (PFYC Class 5) was assigned to highly fossiliferous rock units that consistently and predictably produce significant paleontological resources. High potential (PFYC Class 4) was assigned to rock units that are known to contain a high occurrence of paleontological resources. Moderate potential (PFYC Class 3) was assigned to sedimentary rock units where fossil content varies in significance, abundance, and predictable occurrence. Low potential (PFYC Class 2) was assigned to rock units that are not likely to contain paleontological resources. Very Low potential (PFYC Class 1) was assigned to rock units that are not likely to contain recognizable paleontological resources.

Santa Cruz Mudstone and Coastal Terrace Deposits underly more than 80% of the land surface area of C-CD and where the majority of potentially bedrock disturbing activities (trails, roads, parking) are proposed at C-CD. The PFYC Class assigned to both the Santa Cruz Mudstone and Coastal Terrace Deposits is 3 (moderate potential). Clark (1981) states that microfossils and fish scales occur throughout the Santa Cruz Mudstone formation, but that megafossils, including vertebrates are “exceedingly rare.” The lack of significant paleontological resources in the Santa Cruz Mudstone is further supported by the lack of fossil records from that rock formation at UCMP. No significant fossils for the Coastal Terrace Deposits were reported by Clark (1981) or are represented by records in the UCMP database. All of the other rock formations of C-CD were assigned a PFYC Class of 3 or less, except for the Monterey Formation (PFYC Class 5) and the Santa Margarita Sandstone (PFYC Class 5). Both the Monterey Formation and the Santa Margarita Sandstone contain vertebrate fossils of occasional or rare abundance. Only two small areas of the Santa Margarita Mudstone occur on C-CD. Both areas are approximately the same size of 2 acres. One of the areas occurs in the extreme northwestern corner of C-CD in RMZ#1 at Molino Creek. The other area occurs in the extreme southwestern corner of C-CD in RMZ #4 at Laguna Creek. The area of Monterey Formation measures approximately 250 acres in size and is located in the southeastern corner of C-CD in RMZ #4 at Laguna Creek.

Large volumes of limestone and marble were removed from the Bonny Doon quarry (uplands of Liddell Creek) and large volumes of shale were removed from the San Vicente quarry (uplands of San Vicente Creek) for cement production (see Figs. 3.10-1 and 3.10-2, above). Quarrying disturbed large volumes of the adjacent, fossiliferous Santa Margarita Sandstone (PFYC Class 5). Deed restrictions for C-CD prohibit future quarrying and mining. Due to the lack of macrofossils known to occur at C-CD, the potential for fossil resources to have been impacted by casual or recreation collection of plant (fossilized wood) or invertebrate (seashell) fossils at C-CD is believed to be insignificant.

Forecast

Despite the high proportion of marine sedimentary rocks underlying C-CD, significant paleontological resources are scarce to rare. Quarrying of shale, limestone, and marble removed large volumes of potentially fossil-bearing rock and disturbed adjacent fossiliferous rock formations (Santa Margarita Sandstone; PFYC 5). Deed restrictions for C-CD prohibit future quarrying and mining. Future management and activities at C-CD, such as trail, road, and parking area construction, may disturb and impact fossil-bearing rock. Due to the scarcity of significant paleontological resources within the core management area ($\leq$ PFYC 3) of C-CD, there is a low probability of adverse impacts to significant paleontological resources. Additionally, due to the lack of macrofossils in geologic formations at C-CD, there is little to no potential for recreational (casual use) collection of plant (fossilized wood) or invertebrate (seashell) fossils at C-CD.

3.12 Visual Resource Management

The BLM's Visual Resource Inventory (VRI) standards were incorporated into the TPL's Resource Protection and Access Plan (ESA 2001, 2004. ref. Figure III-9, p. III-51). The BLM's Central Coast Field Office conducted a supplemental inventory in 2017-2018 in anticipation of the C-CD land use planning evaluation (**Tables 3.12-1** and **3.12-2**). The broad view of the Pacific Ocean and sweeping marine terraces are the key scenic features of C-CD. Specific habitats generally noted as visually appealing include conifer forest, especially redwood groves, oak woodlands, riparian areas and wetlands, and grasslands. All of these habitats are present in multiple areas on-site.

During the resource management process, the visual resource class boundaries and objectives can be established, and the BLM will consider visual resources when authorizing on-site management actions and infrastructure.

Table 3.12-1. Calculated GIS acres for the Visual Resource Inventory (VRI) completed in early 2019 (Refer to Appendix A, Figure 9).

VRI Class	Total BLM Acres
VRI Class I	0
VRI Class II	3,705
VRI Class III	2,028
VRI Class IV	53
BLM Total	5,786

Table 3.12-2. Calculated GIS acres for the Visual Resource Inventory (VRI) Scenic Quality Rating Units. Scenic Quality Rating Units were identified using the TPL Resource Protection and Access Plan and were based on similar physiographic and vegetation characteristics (Refer to Appendix A, Figure 9).

Rating	Unit(s)	Total BLM Acres
A (scored 19 or more)	3	2,131
B (scored 12-18)	2,4,5,6,7	3,603
C (scored 11 or less)	8	50
BLM Total		5,784

Forecast

Planned onsite actions such as remediation of historic quarries as well as offsite actions such as the CEMEX plant rehabilitation will likely positively affect future VRI ratings. Modeled changes in temperature and precipitation will likely result in changes to vegetation structure and water availability which will impact long-term VRI analyses.

3.13 Recreation Resources

The U.S. Department of Interior Secretarial Order 3366, Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior, was signed in April 2018. Secretarial Order (SO) 3366 directs the BLM to ensure public lands are open and accessible for recreational pursuits by all Americans and visitors to the United States. Accordingly, the C-CD RMPA identifies the opportunities for the development of new recreational opportunities that comply with applicable laws and regulations.

The C-CD lands offer visitors an opportunity for numerous trail-based and non-trail-based activities. Consistent with SO 3366, it is a priority of the BLM to increase recreational opportunities so more Americans can understand, appreciate, and enjoy the unique values of the C-CD unit of the CCONM. These include the BLM's recommendations for developing new and/or increasing and expanding existing recreational opportunities (e.g., hiking, horseback riding, mountain biking). The RMPA also identifies locations where access for recreation should be limited, including areas that may be unsafe, impractical or impossible to access via public roads or trails.

The U.S. Department of Interior Secretarial Order 3376, Increasing Recreational Opportunities through the use of Electric Bikes, was signed in August 2019. The SO directs BLM to adopt the policy that low-speed electric bicycles, as defined by federal law and SO 3376, operated in the pedal assist mode should generally be given the same access as traditional bicycles. Per SO 3376, the BLM is in the process of developing proposed regulation for electric bikes on public lands.

Since the use of electric bicycles (e-bikes) is becoming more popular, both California State (AB1096) and the Department of the Interior (SO3376) established classes of e-bikes as follows:

Class 1: an electric bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour;

Class 2: an electric bicycle equipped with a motor that may be used exclusively to propel the bicycle, and that is not capable of providing assistance when the bicycle reaches the speed of 20 miles per hour; and

Class 3: an electric bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 28 miles per hour.

Although e-bikes are operable in the same manner as traditional bicycles, the presence of the small motor has lead to regulatory uncertainty about whether e-bikes should be treated as mechanized or as motorized means of transportation. The Consumer Product Safety Act (Act) defines a "low-speed electric bicycle" to include a "two- or three-wheeled vehicle with fully operable pedals and an electric motor of less than 750 watts (1 h.p.), whose maximum speed on a paved level surface, when powered solely by such a motor while ridden by an operator who weighs 170 pounds, is less than 20 mph" and that "a low-speed electric bicycle (as defined in section 38(b) of the Consumer Product Safety Act) shall not be considered a motor vehicle as defined by section 30102(6) of title 49, United States Code (15 U.S.C. § 2085).

California State law AB1096 provided a default framework under which Class 1 and Class 2 e-bikes are legal on any paved surface where a regular bike is allowed to operate and Class 3 e-bikes are prohibited from Class 1 multi-use bike paths unless specifically authorized by local ordinance.

The Bureau of Land Management also provides opportunities to hunt on more than 99 percent of the public lands under its jurisdiction. In contrast, there are currently no opportunities for hunting on public lands in Santa Cruz County. Therefore, the RMPA considers establishing hunting opportunities on C-CD in coordination with CDFW and our valued partners to allow hunting in a safe and environmentally sound manner. From deer and quail to turkey and feral hogs, there's a range of game species present on the C-CD public lands that may be available for licensed hunters under the CDFW's special hunt program.

Throughout the year, the CDFW offers hunt opportunities designed especially for new hunters, youth hunters, women hunters, mobility-impaired hunters and other individuals who have limited experience or opportunity to hunt on their own. The harvesting of wildlife under this program is carefully regulated to ensure an equilibrium between species' populations, economic feasibility, habitat feasibility, public safety, and demand for recreation opportunities. Participants in the CDFW's special hunt program are chosen by lottery, but applicants must meet certain qualifications. Every hunt specifies a maximum hunting party size -- in most cases, that's two hunters, but family hunts may include up to four people.

Public access to C-CD is currently limited to guided hikes while the BLM develops a management plan for the property. As the regional population grows and visitation increases to the Central California coast the demand for sustainable hiking, biking and equestrian trails is also increasing. C-CD is no exception to this trend. To date, the existing administrative route system depicted in Appendix A (Figure 4) has served as the primary recreation facility for guided hikes and tours of the property.

Forecast

For the next 8-12 years, remediation efforts will be occurring within the central portion of C-CD. Remediation boundaries are approximately Bonny Doon Road to the Southeast and Warrenella Road to the northwest. This reduces the suitability of RMZ2 for trail development as health and safety concerns make it undesirable to have public recreation within this central portion during remediation activities. In 2018, the BLM partnered with the Land Trust of Santa Cruz County to commission an engineering study of potential access points for the property. Some of the considerations regarding access points are highlighted below:

- Access points along the Highway 1 corridor pose challenges due to poor line of sight for entrance and egress at most potential locations, as well as requirements for Caltrans encroachment permits (e.g. acceleration and deceleration lanes).
- Sensitive cultural and natural resources are present throughout the property. In order to mitigate impacts to these areas careful attention needs to be made with regards to parking areas and trail alignments.
- Agricultural lands located between C-CD and State Highway 1 limit some potential parking areas for visitor access.
- San Vicente Redwoods property is currently planning trail development upslope of the northern end of C-CD. Multi-use trails in the Molino Creek area would allow interconnectivity between the two properties.
- Coordination with adjacent California State Parks and San Vicente Redwoods will be necessary to establish connections with regional recreation trails currently in place or developed for future use.
- The North Coast Rail Trail project has the potential to increase visitation to the North Coast of Santa Cruz County, and provides opportunities for regional trail connectivity to the City of Santa Cruz.

Demand for recreation opportunities on the North Coast of Santa Cruz County will continue to grow, as population increases in the San Francisco and Monterey Bay regions. Appendix G of this RMPA/EA describes the BLM's visitor use estimates for C-CD based on comparison with other outdoor recreation destinations in the region.

3.14 Transportation and Travel Management

Regional access to C-CD is provided by Highway 1. Highway 1 provides access to San Francisco to the north and Monterey to the south. Though the highway is oriented in an east-to-west direction at the intersection with Laguna Road, it is primarily aligned in a north-to-south direction for interregional travel. The highway is two lanes wide and the speed limit is 55 mph.

The only other primary transportation routes serving C-CD include Bonny Doon Road and Swanton Road, which are both two-lane county roads. Improved routes on or adjacent to C-CD include Warrenella Road, Cement Plant Road, San Vicente Creek Road., and Laguna Road. The majority of other existing access routes are either farm roads used by existing rights-holders to provide access to other properties, grazing operations, reclamation activities, or maintenance and operations of facilities. These routes are secured by locked gates at public road frontages.

There are two bridges on San Vicente Creek Road over San Vicente Creek. The BLM's engineer team condemned the bridge further upstream on San Vicente Creek. The lower bridge was allowed to remain in use with a 10,000 pound not-to-exceed load rating. While still in use, the lower bridge is scheduled for replacement.

At the Yellow Bank Creek and Laguna Creek portions of C-CD, the two-lane highway is at a level-grade, sufficient to allow a clear line of sight for a minimum of 11 seconds when approaching from the north-bound and/or south-bound directions. There is an existing (unimproved) parking area that is immediately adjacent to the east side of SR 1 and the intersection of Laguna Road. The unimproved parking area has a barrier chain and pylons. There are two points where vehicles enter or exit: onto Highway 1, or onto Laguna Road. Currently, this parking area is primarily used by the public to access the ocean.

There are numerous existing roads in the Yellow Bank Creek and Laguna Creek watersheds, including routes (or ways) used by grazing leaseholders and the City of Santa Cruz Water Department. Appendix A, Figure 4, includes a map of the 28 miles of administrative route network at C-CD. Figure III-5 of the Long-Term Resource Protection and Access Plan (ESA 2004) also depicts the roads that are documented in the project area.

Forecast

The California Department of Transportation (Caltrans) published the Transportation Concept Report (TCR) for State Highway 1 in April 2006. The 2006 TCR and associated Fact Sheet for Highway 1 in Santa Cruz County (Caltrans, September 2007) identify the 17-mile stretch from the City of Santa Cruz to the San Mateo County line as Segment 19. Annual Average Daily Traffic (ADT) for Segment 19 in 2000 was 8,000, and the forecast for 2025 is 12,000 annual ADT. It is expected that there will be increased congestion for Segment 19 by 2025. The TCR says Segment 19 will remain a two-lane conventional highway and that new access points should be minimized.

The TCR identifies Wilder Ranch State Park, Henry Cowell Redwoods State Park, Davenport, and Big Basin Redwoods State Park as the major traffic generators on Segment 19. Appendix G of this RMPA/EA describes the BLM's vehicle trip estimates [and parking needs] for C-CD based on comparison with other outdoor recreation destinations in the region.

3.15 Lands and Realty

The BLM currently administers multiple lease agreements, varying in size from less than an acre to nearly 1,000 acres, and several dozen easements and agreements that existed prior to public ownership of C-CD. Many of the easements in the planning area allow utility service to adjacent private parcels, ingress/egress road access, gas and water pipelines and appurtenant water facilities (City of Santa Cruz) and reclamation of shale and limestone quarries adjacent to the C-CD.

Other examples include an easement to allow access from a County water tank site uphill of Pacific Elementary via Marine View Road. There is another County easement for Davenport Sanitation for an underground freshwater pipeline and appurtenant facilities in proximity to Marine View Road.

The City of Santa Cruz owns the parcel where Liddell Spring is located and has had rights to water in Liddell Creek since 1913. Therefore, the City has an easement across C-CD along Laguna Road that includes a water pipeline and access to the waterline for maintenance purposes.

CalTrans administers Highway 1 and the immediate surrounding area in order to perform maintenance when necessary. Cal Trans has an existing parking area along Laguna Road and may require encroachment permits for ingress and egress to the parking lots connecting with the highway at Marina Ranch Road and Yellow Bank/Panther Gap.

PG&E maintains power line easements on C-CD that originate at their substation on a privately-owned inholding on Warranella Road. These power lines connect to and serve the RMC Davenport Cement Plant exclusively. There are currently 15 documented PG&E easements in the BLM records with additional easements requiring research and documentation.

Portions of the C-CD are encumbered with a lease that originated December 2, 1968, between Cemex, successor of RMC Pacific Materials (RMC), and Coast Dairies Land Company for cement plant and mining operations. The main leasehold, which includes the covered belt conveyor corridor, occupies approximately 766 acres of land. The Cemex plant is no longer in operation and the leased lands are under reclamation.

Forecast

There will be maintenance requests from existing rights holders, which may fall outside of their existing easements and require a new permanent or temporary right-of-way. The BLM would only authorize new land use applications for permits or leases that are consistent with the RMPA and the C-CD objectives and values. The land tenure program may be used to target the acquisition of lands from willing sellers with similar resource values to those currently being managed in the plan amendment area or for public access. Managing the impacts of existing rights consistently with the RMPA and the Monument objectives and values as well as unauthorized occupancy and development on the Monument boundaries are likely to continue to present management issues.

3.16 Livestock Grazing

There are three cooperative agreements for prescriptive livestock grazing on C-CD (**Table 3.16-1**). These cooperative agreements are established for 2-year terms, after which they can be renewed or modified based on resource conditions.

Table 3.16-1. Cooperative agreements for prescriptive livestock grazing at C-CD.

Cooperator	Pasture Acres	Pasture Name(s)	# of Head
Ramirez/Wrinkle	190	Marina	
	80	Delones	
Total	270		34
Pastorino	150	Borego	
	500	Big Ranch (Lower Newtown)	
	100	Upper Newtown	
Total	750		90
Williams	180	Yellow Bank Creek	25
TOTAL	1,200		149

Cattle grazing is authorized year-round under all three cooperative agreements. The number of head includes cows, bulls, and non-nursing steers and heifers. Livestock will be removed or numbers reduced if BLM determines vegetation is at a level that cannot sustain the livestock that are turned out. If vegetation is abundant, BLM may allow an increase in the number of livestock turned out. Every month the grazing cooperators send in an Actual Use Statement (form 4130-5) that includes the number of cattle turned out and the day(s) cattle were moved in or out of the pasture. As part of the Cooperative Agreements, each grazing cooperator agrees to:

- Maintain fences on property.
- Maintain livestock watering facilities in grazed pastures.
- Limit off road ATV use to times when cattle are moved or gathered and fence and water maintenance.
- Maintain existing roads and keep them clear of brush and debris.
- Provide periodic mowing to control invasive vegetation and exotic species.
- Abate severe thistles at the corrals.
- Repair corrals as needed.

Grazing cooperators must contact BLM prior to any major maintenance or improvements to the property for review and approval. The Yellow Bank Creek and Marina pastures use the corrals at Yellow Bank. The cattle in the Delones pasture uses the corrals near Laguna Creek or the corrals on the terrace above Marina Ranch road. The cattle at the Borego, Big Ranch (Lower Newtown), and Upper Newtown pastures use the corrals near the Mocettini Cheese House, north of Warrenella Road.

Cattle have access to portions of Laguna Creek, Yellow Bank Creek, and Molina Creek for water along with seasonal streams and small ponds. Water is also piped to water troughs in the Marina Laguna Creek pastures. Water troughs are also located at the corrals at Yellow Bank and the Mocettini Cheese House.

Forecast

The forecast is that grazing will continue at C-CD. Existing grazing infrastructure on the property is in poor condition and will continue to degrade in the absence of replacement and/or major capital improvement. The BLM will work with cooperators on needs, such as fencing, waterlines, maintenance of existing infrastructure, and potential use of pesticides near corrals, tanks, buildings, gates, or fences to reduce flashy fuels and propagation of invasive plants. The BLM will investigate the utilization of grazing for targeted vegetation management objectives, and work with operators to develop a program where controlled livestock grazing could be used to protect the grasslands and oak woodland habitat, increase habitat biodiversity, control exotic annuals and invasive weeds and protect wetland riparian values.

3.17 Social and Economic Conditions

Most of the population in Santa Cruz County is located centrally in the urban and residential development areas. Land uses in the county are predominately open space, which accounts for approximately 75 percent of the land uses (293,300 acres). This is followed by agricultural lands (54,400 acres or 14 percent), residential land (15,500 acres or 4 percent), developed non-residential uses (5,800 acres or 2 percent), and parks, recreation and open space (5,400 acres or 1 percent). The North Coast area is used widely for recreational purposes, including hiking, running, biking, walking, surfing, and equestrian use.

The small unincorporated community of Davenport has a population of approximately 400 people and includes residences, shops, restaurants, lodging, other visitor serving retail uses and Pacific Elementary School, a small public school (US Census 2010). The City of Santa Cruz was estimated to have a 2016 population of approximately 65,000 (US Census 2017).

The BLM used the Economic Profile System (EPS), created by Headwaters Economics, to evaluate socioeconomic statistics from federal data sources, including the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics (Headwaters 2020). The EPS allows BLM to compare socioeconomic indicators of Santa Cruz to the rest of California and the nation. **Table 3.17-1** shows a summary of these indicators for Santa Cruz County.

The County of Santa Cruz was estimated to have a 2018 population of approximately 274,244 (Headwaters 2020). A brief outline of other information provided in the EPS reports is described below, followed by a “Summary Overview” table that compares the socioeconomic statistics for Santa Cruz County, the State of California, and the entire United States (U.S.). Refer to Appendix I for a copy of the EPS Summary Report generated on January 22, 2020.

Standard measures of growth and decline are population, employment, and real personal income. Trends indicate the population, employment, and real personal income in Santa Cruz County increased at a greater rate than the rest of California and the U.S. from 1970 – 2018. Long-term, steady growth of population, employment, and real personal income is generally an indication of a healthy, prosperous economy. Growth can benefit the general population of a place, especially by providing economic opportunities, but it can also stress communities and lead to income stratification. If the population growth trend in this region continues for the next 10 years, Santa Cruz County could see up to 25,000 additional residents in rural and urban locations during the life of this plan (SCCRTC 2019).

Prosperity measures suggest that unemployment is higher, and average earnings per job are lower, in Santa Cruz County than the rest of the State and U.S. Nonetheless, per capita income is higher in the County than both regions of comparison. The per capita income in Santa Cruz County may be higher due to the presence of retirees and people with investment income because it is based on the total population and includes non-labor income sources.

Evaluation of data for 2018 in three sectors show that non-labor income (e.g., government transfer payments, and investment and retirement income) and government employment is like the rest of the State and Country. Non-labor income is already more than a third of all personal income, and this source of income is expected to grow more as the Baby Boomer generation retires. This indicates that Santa Cruz hosts an aging population and/or remains attractive to people with investment income.

While the Services percent of employment is also close to the State and National rates, it is lower in Santa Cruz County. Services consist of a wide mix of jobs including high-wage, high skilled occupations (e.g., doctors, engineers, software developers) and low-wage, low-skilled occupations (e.g., restaurant workers,

tour bus operators). The service sector typically provides services, such as banking and education, rather than creating tangible objects. However, many service sectors such as utilities, engineering, and architecture are closely associated with goods-producing sectors.

Government is a major employer due to the presence of significant public assets, such as State and County Parks, and other government facilities and programs operated by the City of Santa Cruz. Changes in government employment tend to track population trends. As a result, the county and city governments are expected to account for the majority of future job growth in the government sector as additional services are demanded by a population growing at 0.48% annually (SCCRTC 2019).

Various components of the economy are typically associated with the use of public lands, including timber, mining and agriculture, and industries that include travel and tourism. However, the deed restrictions for C-CD preclude resource extraction, so timber and mining are not considered in the RMPA. On the other hand, travel and tourism and agriculture are prevalent in Santa Cruz County as reflected in the percent of employment in both these sectors, which are markedly higher than State and U.S.

It is important to understand the relative size of sectors to put the commodity related economy into perspective. For example, decisions that permit (or restrict) grazing activities have a higher chance of impacting a county with a high percentage of its employment in the commodity sectors. Based on the data it is clear that tourism and recreation continue to stimulate local employment. Communities surrounding C-CD can benefit directly from visitors who spend money in rentals, restaurants, gift shops, and elsewhere. Tourism can also help communities retain and attract capital and spur transitions to more diverse economies.

It is worth noting the C-CD is the only significant federal land ownership in Santa Cruz County. At 5,843 acres, the property accounts for 2.0% of the entire County. As a result, actions on the federal lands are not likely to affect the local economy. For example, the low volume of federal lands demonstrates the County does not depend on payments related to federal lands to supplement economic growth. On the other hand, since these lands are managed primarily for their non-commercial values (i.e., scenery, wildlife, recreation), they potentially play a different economic role than public lands more commonly associated with commodity sectors described above.

According to the EPS reports, residential development of private lands declined (- 3%) in Santa Cruz from 2000 – 2010 compared to more than 15% growth in California and 12% for the entire U.S. This trend demonstrates Santa Cruz County's aversion to converting open space and agricultural land to residential development, which has occurred at a more rapid pace in many other parts of the U.S. On the other hand, almost 60% of the private lands within 500 meters of the public lands (i.e. wildland-urban interface) have been developed in Santa Cruz County; as opposed to less than 20% across the other regions of comparison. The development of homes on private lands adjacent to C-CD poses several challenges including the risk to nearby communities from wildfires; increased danger to wildland firefighters; and the consumption of funds that might otherwise be used for restoration, recreation, research, and other activities.

Table 3.17-1 Summary of Economic Indicators

Summary			
Santa Cruz County, CA			
Overview			
	Santa Cruz County, CA	California	U.S.
Population, 2018	274,255	39,557,045	327,167,434
Trends			
Population % change, 1970-2018	119.8%	97.6%	60.5%
Employment % change, 1970-2018	219.3%	167.4%	119.9%
Personal Income % change, 1970-2018	426.9%	291.2%	222.1%
Prosperity			
Unemployment rate, 2018	4.9%	4.2%	3.9%
Average earnings per job, 2018 (2018 \$s)	\$60,944	\$73,815	\$62,321
Per capita income, 2018 (2018 \$s)	\$69,355	\$63,557	\$54,446
Economy			
Non-Labor % of personal income, 2018	36.5%	36.2%	37.4%
Services % of employment, 2018	70.8%	75.3%	73.1%
Government % of employment, 2018	13.0%	11.6%	12.2%
Use Sectors^A			
Timber % of private employment, 2016	~0.2%	0.3%	0.6%
Mining % of private employment, 2016	~0.0%	0.1%	0.5%
Fossil fuels (oil, gas, & coal), 2016	~0.0%	~0.1%	0.4%
Other mining, 2016	~0.0%	0.1%	0.3%
Agriculture % of employment, 2018	4.4%	1.0%	1.3%
Travel & Tourism % of private emp., 2016	22.3%	16.8%	15.8%
Federal Land*			
Federal Land % total land ownership	2.1%	47.4%	27.5%
Forest Service %	0.0%	20.5%	8.4%
BLM %	2.0%	14.9%	10.5%
Park Service %	0.0%	7.6%	3.4%
Military %	0.0%	3.9%	1.1%
Other %	0.1%	0.5%	4.1%
Federal land % Type A**	100.0%	49.9%	37.6%
Federal payments % of gov. revenue, FY2012			
Development			
Residential area % change, 2000-2010	-3.0%	15.5%	12.3%
Wildland-Urban Interface % developed, 2010	58.8%	17.2%	16.3%

Estimates for data that were not disclosed are indicated with tildes (~).

^AData for timber, mining, and travel and tourism-related are from County Business Patterns which excludes proprietors, and data for agriculture are from Bureau of Economic Analysis which includes proprietors.

* The land ownership data source and year vary depending on the selected geography. See following pages for specifics.

** Federal public lands that are managed primarily for natural, cultural, and recreational features. These lands include National Parks and Preserves (NPS), Wilderness (NPS, FWS, FS, BLM), National Conservation Areas (BLM), National Monuments (NPS, FS, BLM), National Recreation Areas (NPS, FS, BLM), National Wild and Scenic Rivers (NPS), Waterfowl Production Areas (FWS), Wildlife Management Areas (FWS), Research Natural Areas (FS, BLM), Areas of Critical Environmental Concern (BLM), and National Wildlife Refuges (FWS).

Data Sources: Various; see following pages for specifics.

Find more reports like this at headwaterseconomics.org/eps

Data and Graphics | Page 4

4. Environmental Consequences

4.1 Introduction

This chapter analyzes the environmental consequences of implementing the management actions described in Chapter 2. The depth and breadth of the impact analyses presented in this chapter are commensurate with the level of detail of the management actions presented in Chapter 2, and on the availability and/or quality of data necessary to assess impacts. The baseline used for expected impacts is the current conditions in the planning area described in Chapter 3 (Affected Environment). The analysis for the proposed plan amendment is presented by resource and organized into the following sections:

- Summary of goals and management actions that affect the resource;
- Analysis of direct and indirect impacts specific to land use decisions, and then for the implementation decisions subject to appeal; and
- Analysis of cumulative impacts.

If impacts are not discussed, analysis has indicated either that none would occur or that their magnitude would be negligible. No or negligible impacts have been identified for geology, air, prime and unique farmlands, and hazardous materials. Therefore, these resources will not be discussed.

4.1.1 Impact Analysis Methodology

In general, impacts to resources in the planning area are analyzed by determining the effects on a given resource from management actions that would occur for each alternative under the range of alternative described in Chapter 2, including the preferred alternative (Alternative D). Impacts are related to desired future conditions by comparing the impacts from implementation of management actions to achieving the goals and objectives specified for each resource/resource program and to the existing environmental conditions. For management actions that do not achieve the stated goals and objectives or that generally do not meet BLM's multiple use mandate, or that result in significant negative changes to physical or social conditions, the impact is characterized as adverse. For management actions that do achieve goals and objectives, the impact is characterized as beneficial. If a management action does not specifically affect a desired future condition, there is no impact. Finally, if there is not enough specificity to determine whether a management action would achieve the goals and objectives, the impact can only be described in general terms. Where it is practical, quantitative impacts (length and area) are calculated and presented.

4.1.2 Types of Impacts to be Addressed

Direct and Indirect Impacts

Terms referring to the intensity, context (geographic extent), and duration of impacts are used in this chapter. Impacts are not necessarily only negative; positive benefits are specified as such. The standard definitions for terms used in the impacts analysis include the following:

- **Adverse** – the effect is negative.
- **Beneficial** – the effect is positive.
- **Negligible** – the effect is at the lower level of detection; change would be hard to measure.
- **Minor** – the effect is slight but detectable; there would be a small change.
- **Moderate** – the effect is readily apparent; there would be a measurable change that could result in small, but permanent change.

- **Major** – the effect is large; there would be a highly noticeable, long-term, or permanent measurable change.
- **Localized** – the effect occurs in a specific site or area.
- **Temporary** – the effect occurs only during implementation of a management action, at a time scale of a few days to a one month.
- **Short-term** – the effect occurs only for a short time (few months to one year) after implementation of a management action.
- **Long-term** – the effect occurs for an extended period (few years to one decade) after implementation of a management action.
- **Permanent** – the effect is irreversible at the human time scale (several decades); the resource may never revert to current conditions.
- **Direct** – effect that occurs as a result of actions on the resource being addressed.
- **Indirect** – effect that occurs as a result from actions on other resources.

Off-site Impacts and Cumulative Impacts

Off-site impacts are impacts that occur to resources or lands outside the planning area as a result of BLM management actions taking place within the planning area. Cumulative impacts are defined as:

The impact on the environment which results from the incremental impact of the action when added to past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts can result from similar projects or actions, as well as projects or actions that have similar impacts (40 CFR 1508.7).

The time frame for the cumulative impacts analysis begins when the RMPA takes effect and extends for the life of the plan.

4.1.3 Incomplete or Unavailable Information

Impacts are quantified where possible. Impacts are sometimes described using ranges of potential impacts or in qualitative terms. In the absence of quantitative data, impacts are described based on the professional judgment of the interdisciplinary team of technical specialists using the best available information. Impacts analysis based on incomplete or unavailable information is identified where applicable in the Introduction for each resource area in this chapter.

4.1.4 Assumptions

Several general assumptions were made to facilitate the analysis of potential impacts. The assumptions listed below are common to all resources. Other assumptions specific to a particular resource are listed under that resource.

- Visitor use is anticipated to be like other nearby destinations for outdoor recreation. As a result, approximately 50,000; 150,000; and 250,000 annual visitors are predicted to recreate within the C-CD under Alternatives A, B, and C), respectively. Under Alternative D, visitation is expected to fall between 150,000 to 250,000 annual visitors. Refer to **Appendix G** for the Cotoni-Coast Dairies Visitor Use and Parking Estimates. Approximately 75% of these visitors are likely to be residents of Santa Cruz County. Many of these visitors would be visiting C-CD in lieu of or in combination with another recreation destination on the North Coast (e.g. Wilder Ranch State Park, Coast Dairies State Park).

- Funding and personnel would be sufficient to implement any alternative described.
- The approved RMPA would be in effect for 15 to 20 years.
- For the purposes of analysis, it is assumed that the BLM will implement both phases of recreation development described in Chapter 2.
- The special hunt program proposed for Alternatives B, C and D would be managed in partnership between the BLM and California Department of Fish and Wildlife (CDFW). The program would be established to meet public demand for this activity, while ensuring public safety by avoiding conflicts with other recreationists and adjacent landowners. The number of hunting permits to be issued - based on a lottery system – would be similar to Canada de Los Osos in Santa Clara County. On that property, the CDFW hosts five permitted-hunts each year with two turkey hunts, two pig hunts and one deer hunt. Each hunt is a two-day period. For C-CD, the BLM and CDFW anticipate the number of hunters for each hunt would be 2-4 people. For native species (deer), CDFW and BLM would partner on baseline and annual surveys in the area to determine how many individuals could be sustainably taken on an annual basis. The impacts analysis, therefore, assumes that annual authorized take of deer will result in a negligible adverse impact on the regional deer population.

4.1.5 Incorporation by Reference

There are numerous reports that are incorporated in this RMPA/EA by reference. In particular, the Coast Dairies Existing Conditions Report, prepared by Environmental Science Associates (ESA 2001). This report synthesized the available scientific information associated with the physical environment and the human environment to support the development of the Trust for Public Land's "Coast Dairies Recommendation for Long-Term Resource Protection and Access Plan" (ESA 2004). Other reports incorporated by reference for a particular resource are listed under that resource section.

4.1.6 Tiering to Other Environmental Review Documents

This EA is tiered to the environmental impact statements (EIS) associated with the CCMN RMP (BLM 2005a) and the CCFO's RMP for the Southern Diablo Mountain Range and Central Coast of California (BLM 2007). The Final EIS for the CCFO RMP provides an overview of impacts that were expected to occur in the Central Coast Management Area, including the C-CD lands before they were added to the California Coastal National Monument. The background and overall impact statement is provided in Chapter 4, with regards to the location or severity of the potential impacts and appropriate mitigation measures.

4.1.7 Organization of Impact Analyses

For each resource, the possible effects from other resource management programs are described and analyzed. Within each section of the resource analysis, effects common to all alternatives are discussed first. Then effects from individual alternatives are described comparatively, to clarify differences between the alternative approaches. The cumulative impacts are identified at the end of the Chapter, as applicable. Where no cumulative impacts are stated, the BLM's analysis determined they would be negligible or nonexistent because the range of alternatives would have no effect on those resources, including but not limited to geology, air quality, paleontological resources, prime and unique farmlands, hazardous materials, social and economic conditions, or environmental justice concerns.

4.2 Biological Resources – Upland Terrestrial Vegetation

4.2.1 Introduction

Biological resources include the plant and animal species and populations, natural communities, and ecosystem processes that occur within C-CD. A diversity of vegetation communities, habitats, and plant and animal species, including special status species, occur in C-CD. This section discusses impacts on vegetation communities and habitat, both common and sensitive, and applicable mitigation. Analysis of the effects of herbicide application on vegetation is provided in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

Vegetation communities may be recognized as sensitive or afforded other special conservation status due to high natural importance; dependence of certain special-status species for habitat, including designated critical habitat; or rarity of the natural community, due either to inherent rarity or to human-related causes. For the purposes of this analysis, sensitive natural communities at C-CD include the following:

- Riparian areas, including any vegetation or habitat that is distinct from surrounding upland terrestrial habitat, and is dependent upon intermittent, seasonal, or perennial soil moisture.
- Habitat or vegetation meeting criteria as wetlands according to State or Federal delineation criteria;
- Habitat or vegetation that may support special-status species of plants, fish, or wildlife;
- Communities recognized by CDFW as sensitive (i.e., as noted in the Natural Communities List (CDFW 2019);
- Habitat designated by USFWS as “critical habitat” for a Federally-listed threatened or endangered species; or
- Habitat recognized as “essential habitat” for a Federally-listed species, even if the habitat is excluded from the final critical habitat designation.

Riparian areas and wetlands represent a particularly sensitive habitat at C-CD and, therefore, are specifically addressed in Section 4.3 Biological Resources – Riparian Areas and Wetlands (Aquatic).

Methods of Analysis

The analysis of direct and indirect effects is focused on species, populations, and habitats within the planning area. Direct impacts are the direct or immediate effects of an action on biological resources. Examples of direct impacts to vegetation include removal or degradation of the vegetation, or direct mortality of wildlife by a vehicle. Indirect impacts are those effects that are caused by or will result from the action, later in time or farther removed in distance, but are still reasonably certain to occur. Examples of indirect effects to native habitat and vegetation include soil erosion, sedimentation, and introduction of non-native species that may compete with native species and cause habitat degradation.

Effects to vegetation may be short-term and temporary or long-term and permanent. See Section 4.1.2 for definitions of these terms specific to this document. Short-term and temporary impacts refer to project effects such as construction-phase disturbance, without long-term or permanent land use conversion, so that vegetation may return to a more natural condition or may be actively revegetated or enhanced within a few years. An example of a short-term and temporary impact is mowing of non-native grassland and weedy/ruderal patches, and since this vegetation type is dominated by annual plant species, it will return to full vegetative cover within a short timeframe. Long-term and permanent impacts would preclude most natural vegetation and habitat function throughout the life of a proposed project, or longer. Examples of long-term, permanent impacts are grading for new trails, roads, and parking lots. The grading will remove

vegetation and topsoil and the constant vehicle and foot traffic will maintain the area free of vegetation long-term – for years to decades.

Potential effects of management actions to vegetation and special-status plant and wildlife species, populations, and habitats were identified by a team of biologists. A GIS data set and overlays of resources and land uses were used to analyze effects. In the absence of quantitative data, best professional judgment was used to provide qualitative information.

Assumptions

Assumptions used in this impact analysis include the following:

- All actions undertaken as part of this RMPA would be assessed in accordance with the National Environmental Policy Act (NEPA) and the Federal Endangered Species Act. If required, consultation with the USFWS would be completed. Project Design Features (PDFs, **Appendix D**), Best Management Practices (BMPs), Standard Operating Procedures (SOPs), and terms and conditions in this RMPA and subsequent NEPA documents and biological opinions will be applied and followed.
- Over time, species distribution may change. Warmer temperatures due to climate change, coupled with only a slight increase in precipitation, would result in substantially greater evapotranspiration rates. Greater aridity and evapotranspiration rates may result in dramatic plant species and vegetation type shifts, increased and drier fuel loads, and increasingly severe wildfires.
- Impacts on special status species would be similar to those discussed for species with no special status. Special status species may be more restricted in distribution, reducing the likelihood that certain activities would interact with them. However, impacts on special status species could be more pronounced due to reduced population sizes and ranges and increasing threats. More emphasis would be placed on avoiding or minimizing project effects on special status species since their populations are already in decline. Similarly, more emphasis would be placed on implementing conservation actions for special status species.

4.2.2 Impacts Common to All Alternatives

Depending on the affected vegetation, the loss of relatively small acreages for activities related to activities (and associated disturbance) affecting sites with little native habitat value would not have substantial impacts to upland, terrestrial vegetation communities. Examples of sites at C-CD with little native habitat value include the quarries (abandoned). Note, however, that vegetation and habitat in the immediate vicinity of infrastructure may support special-status plant and animal species.

In addition to the direct impacts to habitat, management activities could have indirect impacts to surrounding vegetation and habitat. The extent and significance of these indirect habitat effects would be dependent on the sensitivity of adjacent habitat and wildlife it supports. These impacts may include:

- Introduction or spread of non-native plant and wildlife species and/or pathogens;
- Dust and other airborne particulates caused by project activities or vegetation removal;

Long-term changes in average annual precipitation and average annual temperature are likely to result in increased aridity with more frequent and severe droughts (Field et al. 2016). The current ‘business as usual’ greenhouse gas emissions scenario model is Relative Concentration Pathway (RCP) 8.5 (Cal-Adapt 2019). Consensus of scientific models for RCP 8.5, for C-CD through the year 2100, suggest a sharp increase in average annual temperature from 57°F to 63°F (+6°F; much warmer) and a modest increase in average annual precipitation of 3 to 5 inches (slightly wetter; Field et al. 2016; Thorne et al. 2016; Beck et al. 2018; Cal-Adapt 2019).

Vulnerability to the long-term changes in average annual precipitation and average annual temperature varies widely by species, according to ranges of tolerance to abiotic and biotic conditions for each species, and interaction among these inherent ranges and other changes throughout the environment. Retention of biological connectivity and facilitation of wildlife movement among habitat areas (migration corridors) is the primary mitigation strategy to minimize expected effects of these changes to biological resources. Many species or populations may need to move on a regional scale from areas of declining habitat suitability to areas of stable or increasing habitat suitability. The effects of long-term changes in average annual precipitation and average annual temperature will have unavoidable impacts on regional biological connectivity.

The CZU Lightning Complex burned 86,509 acres, and is by far the largest wildfire in recent history in the Santa Cruz/San Mateo County region. Approximately 1,052 acres of C-CD burned in this fire in the Molino, Agua Puerca, and San Vicente watersheds (**Figure 14**). Observations of fire behavior on C-CD suggest a mosaic of burn intensities, dependent on fuel type, slope, and aspect. In areas where coastal scrub burned and french broom (non-native shrub) is present, french broom may opportunistically invade and expand. Ingrasslands, conditions should remain the same and even possibly improve in the short term since accumulated thatch has been burned off. Forest and chaparral areas should have little to no adverse impact and be improved over the long term. The wildfire has reduced accumulated fuel loads and will facilitate knobcone pine (closed cone pine) recruitment (new seedlings).

The PDF's identified in **Appendix D** would benefit vegetation and habitats at the local and landscape scales by eliminating or reducing negative impacts stemming from management activities.

Additionally, site-specific evaluations of proposed ground disturbing activities will include delineations of State or Federal jurisdictional hydrologic features, including wetlands, to determine whether State or Federal permitting may be required.

4.2.3 Impacts of Alternative A (No Action)

Recreation

Long-term, permanent impacts from the construction of new Day Use Sites near Molino Creek and off Bonny Doon road comprises 1.75 acres total. Of the total area of impacts, 1.35 acres is non-native grassland. Long-term, permanent impacts from the construction of new trails comprises 0.84 acres total. Of the total area of impacts, 0.05 acre is coastal scrub and 0.21 acre is conifer forest.

Increased public access may increase the potential for introduction of additional non-native plant species (weeds), thereby potentially resulting in adverse impacts on native vegetation and habitat. In addition, sudden oak death is known to occur in Santa Cruz County and can be spread by recreationists, particularly in moist shoes and tires. The further down the trail the recreationist travels, the greater the likelihood that they will encounter, pick up and spread the pathogen. Lands available to recreation have higher incidence of Sudden Oak Death than lands closed to recreation (Cushman et al. 2008). While Sudden Oak Death has been noted in native trees onsite, all of the locations where it is currently present onsite are not known.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network (**Appendix A: Figure 4, Transportation**) comprises 33.36 acres total. Of the total area of existing impacts to onsite habitats, 0.79 acre is weedy/ruderal patch, 3.01 acres is non-native grassland, 4.21 acres is native grassland, 0.98 acre is coyote brush encroachment, 7.60 acres is coastal scrub, 2.41 acres is coast live oak, 0.04 acre is chaparral, 0.06 acre is broadleaf forest, 7.46 acres is conifer forest, and 3.53 acres is quarries (abandoned).

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments (1,167 acres total) would have long-term, major, beneficial

effects on grasslands. The beneficial effects would include reducing the dominance of weedy/ruderal patches.

The exclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, negative effects on individual plant species and upland terrestrial vegetation habitat, especially in the grassland and coastal scrub vegetation types. Non-native plant species are anticipated to continue to spread, and the spread of these weeds would continue to displace (outcompete) native plant species. The continued exclusion of fire from the wildfire adapted vegetation types would result in continued fuel load accumulation and suppressed regeneration and recruitment.

4.2.4 Impacts of Alternative B

Recreation

Long-term, permanent impacts from the construction of new Day Use Sites including Warrenella Gate, Warrenella Top and Marina Ranch comprises 9.39 acres total. The entire 9.39 acres is non-native grassland. Long-term, permanent impacts from the construction of new trails comprises 9.18 acres total. Of the total area of impacts, 0.74 acre is weedy/ruderal patch, 4.39 acres is non-native grassland, 0.31 acre is native grassland, 0.96 acre is coyote brush encroachment, 1.55 acres is coastal scrub, 0.33 acre is coast live oak woodland, 0.11 acre is chaparral, and 0.62 acre is conifer forest.

Increased public access may increase the potential for introduction of additional non-native plant species (weeds), thereby potentially resulting in adverse impacts on native vegetation and habitat. Increased acres of trails are anticipated to result in higher potential for spread of Sudden Oak Death.

Historically, fire starts associated with recreation has been a very low risk in C-CD. Once areas are open to the public, the chances of accidental ignition could increase. The potential adverse impacts of non-native plant species and excessive fine fuels risk for wildfire may be mitigated with herbicide application and prescribed fire to manage vegetation and fuel loads.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Of the total area of impacts, 0.79 acre is weedy/ruderal patch, 3.01 acres is non-native grassland, 4.21 acres is native grassland, 0.98 acre is coyote brush encroachment, 7.60 acres is coastal scrub, 2.41 acres is coast live oak, 0.04 acre is chaparral, 0.06 acre is broadleaf forest, 7.46 acres is conifer forest, and 3.53 acres is quarries (abandoned).

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments (2,229 acres total) would have long-term, major, beneficial effects on non-native grasslands. The beneficial effects would include reducing the dominance of weedy/ruderal patches and preventing encroachment of coyote brush into grasslands. Installation of water troughs in uplands, and improved fences to better distribute livestock grazing should have moderate to major, long-term, beneficial effects on vegetation health of grasslands.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, beneficial effects on individual plant species and upland terrestrial vegetation habitat, especially in the grassland and coastal scrub vegetation types. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types, such as thistles in grasslands. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to non-target upland terrestrial vegetation. Prescribed fire

would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, control non-native plant species, and to restore native grasslands and coastal scrub.

4.2.5 Impacts of Alternative C

Recreation

Long-term, permanent impacts from the construction of new Day Use Sites including Swanton Gate, Warrenella Gate, Warrenella Top and Marina Ranch comprises 10.74 acres total. The entire 10.74 acres is non-native grassland.

Long-term, permanent impacts from the construction of new trails comprises 11.49 acres total. Of the total area of impacts, 0.77 acre is weedy/ruderal patch, 4.39 acres is non-native grassland, 0.69 acre is native grassland, 0.97 acre is coyote brush encroachment, 3.29 acres is coastal scrub, 0.33 acre is coast live oak, 0.11 acre is chaparral, and 0.70 acre is conifer forest.

Increased public access may increase the potential for introduction of additional non-native plant species (weeds), thereby potentially resulting in adverse impacts on native vegetation and habitat. Sudden Oak Death (SOD) has been documented to occur at C-CD and introducing trails could result in greater spread and higher incidence of SOD in native oaks including tanoak and coast live oak.

Historically, fire starts associated with recreation has been a very low risk in C-CD. Once areas are open to the public, the chances of accidental ignition would increase. The potential adverse impacts of non-native, invasive plant species and excessive fine fuels risk for wildfire may be mitigated with herbicide application and prescribed fire.

Transportation and Travel Management

Continued long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Of the total area of impacts, 0.79 acre is weedy/ruderal patch, 3.01 acres is non-native grassland, 4.21 acres is native grassland, 0.98 acre is coyote brush encroachment, 7.60 acres is coastal scrub, 2.41 acres is coast live oak, 0.04 acre is chaparral, 0.06 acre is broadleaf forest, 7.46 acres is conifer forest, and 3.53 acres is quarries (abandoned).

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments (2229 acres total) would have long-term, major, beneficial effects on non-native grasslands. The beneficial effects would include reducing the dominance of weedy/ruderal patches and preventing encroachment of coyote brush into grasslands. A total of 744 acres and an additional 74 head of cattle (or 296 head of sheep or goats) would be added as new grazing allotments identified as Swanton Road and Liddell Creek. The new grazing allotments would result in additional long-term, major, beneficial effects on non-native grasslands by reducing the dominance of weedy/ruderal patches and preventing encroachment of coyote brush into grasslands. Installation of water troughs in uplands, and improved fences to better distribute livestock grazing should have moderate to major, long-term, beneficial effects on vegetation health of native grasslands.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, beneficial effects on individual plant species and upland terrestrial vegetation habitat, especially in the grassland and coastal scrub vegetation types. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types, such as thistles in grasslands. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to non-target upland terrestrial vegetation. Prescribed fire

would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, control non-native plant species, and to restore native grasslands and coastal scrub.

4.2.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Long-term, permanent impacts from the construction of new Day Use Sites including Swanton Gate, Warrenella Gate, Warrenella Top and Marina Ranch comprises 9.38 acres total. The entire 9.38 acres is non-native grassland.

Long-term, permanent impacts from the construction of new trails comprises 11.61 acres total. Of the total area of impacts, 0.63 acre is weedy/ruderal patch, 5.00 acres is non-native grassland, 0.34 acre is native grassland, 0.82 acre is coyote brush encroachment, 2.09 acres is coastal scrub, 0.25 acre is coast live oak, 0.26 acre is chaparral, and 1.97 acre is conifer forest.

Increased public access may increase the potential for introduction of additional non-native plant species (weeds), thereby potentially resulting in adverse impacts on native vegetation and habitat. Sudden Oak Death (SOD) has been documented to occur at C-CD and introducing trails could result in greater spread and higher incidence of SOD in native oaks including tanoak and coast live oak. The potential adverse impacts of non-native, invasive plant species and excessive fine fuels risk for wildfire may be mitigated with herbicide application and prescribed fire.

Transportation and Travel Management

Continued long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Of the total area of impacts, 0.79 acre is weedy/ruderal patch, 3.01 acres is non-native grassland, 4.21 acres is native grassland, 0.98 acre is coyote brush encroachment, 7.60 acres is coastal scrub, 2.41 acres is coast live oak, 0.04 acre is chaparral, 0.06 acre is broadleaf forest, 7.46 acres is conifer forest, and 3.53 acres is quarries (abandoned).

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank pastures (2,229 acres total) would have long-term, major, beneficial effects on non-native grasslands. The beneficial effects would include reducing the dominance of weedy/ruderal patches and preventing encroachment of coyote brush into grasslands. A total of 744 acres and an additional 74 head of cattle (or 296 head of sheep or goats) would be added as new grazing allotments identified as Swanton Road and Liddell Creek. The new grazing areas would result in additional long-term, major, beneficial effects on non-native grasslands by reducing the dominance of weedy/ruderal patches and preventing encroachment of coyote brush into grasslands. Installation of water troughs in uplands, and improved fences to better distribute livestock grazing should have moderate to major, long-term, beneficial effects on vegetation health of grasslands.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, beneficial effects on individual plant species and upland terrestrial vegetation habitat, especially in the grassland and coastal scrub vegetation types. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types, such as thistles in grasslands. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to non-target upland terrestrial vegetation. Prescribed fire would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, control non-native plant species, and to restore native grasslands and coastal scrub.

4.3 Biological Resources – Riparian Areas and Wetlands (Aquatic)

4.3.1 Introduction

Riparian areas and wetlands are a particularly sensitive vegetation type and habitat at C-CD, supporting several Federally-listed fish and amphibian species. Riparian areas and wetlands are distinguished from upland, terrestrial vegetation types by having perennial water availability that is manifested at the surface as flow or ponding. Riparian areas are the interface between upland, terrestrial vegetation and wetlands. Wetlands often support a highly diverse plant and animal community and provide critical hydrologic and ecological functions that support ecosystem integrity. Properly functioning wetlands provide flood abatement, sediment retention, groundwater recharge, nutrient capture, and habitat for numerous special status plant and animal species (ESA 2001). Analysis of the effects of herbicide application on Water Resources and Quality and Wetland and Riparian Areas is provided in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

Assumptions

Assumptions used in this impact analysis include the following:

- All actions undertaken as part of this RMPA would be assessed in accordance with the National Environmental Policy Act (NEPA) and the Federal Endangered Species Act. Consultation with the USFWS and/or NOAA Fisheries would be completed. Best Management Practices (BMPs), Standard Operating Procedures (SOPs), mitigation measures, and terms and conditions in this RMPA and subsequent NEPA documents and biological opinions will be applied and followed.
- Valid existing rights would be honored, but BMPs, SOPs, stipulations, mitigation measures, and terms and conditions in this RMPA and subsequent NEPA documents and biological opinions will be applied and followed.
- If additional special status species or critical habitat is designated or discovered, the objectives and decisions promoting protection within this RMPA would extend to such species as well.
- Over time, species distribution may change. Management action locations would change accordingly.
- Impacts on special status species would be similar to those discussed for species with no special status. Special status species may be more restricted in distribution, reducing the likelihood that certain activities would interact with them. However, impacts on special status species could be more pronounced due to reduced population sizes and ranges and increasing threats. More emphasis would be placed on avoiding or minimizing project effects on special status species since their populations are already in decline. Similarly, more emphasis would be placed on implementing conservation actions for special status species.

Best Management Practices (BMP) and Standard Operating Procedures (SOP)

The BMPs and SOPs for this RMPA (**Appendix D**):

- Conduct biological surveys prior to disturbance and at the appropriate time of year to detect sensitive species and important biological resources. Conduct surveys in compliance with agency protocols.
- Design stream crossings to minimize adverse impacts to soil, water quality, and riparian vegetation. Maintain natural drainage patterns.
- Minimize erosion and sedimentation. Protect water quality.
- Minimize the introduction and spread of non-native plant and wildlife species.

Method of Analysis

The analysis of direct and indirect effects is focused on species, populations, and habitats within the planning area. Direct impacts are the direct or immediate effects of an action on biological resources. Examples of direct impacts to vegetation include removal or degradation of the vegetation. Indirect impacts are those effects that are caused by or will result from the action, later in time or farther removed in distance, but are still reasonably certain to occur. Examples of indirect effects to native habitat and vegetation include erosion, sedimentation, and introduction of non-native species that may compete with native species and cause habitat degradation.

Effects to vegetation may be short-term and temporary or long-term and permanent. See Section 4.1.2 for definitions of these terms specific to this document. Short-term and temporary impacts refer to project effects such as construction-phase disturbance, without long-term or permanent land use conversion, so that vegetation may return to a more natural condition or may be actively revegetated or enhanced within a few years. An example of a short-term and temporary impact is removal of non-native plant species (e.g. cape ivy), which may produce small disturbed areas in riparian areas. Since riparian vegetation is relatively fast growing, it should return to full vegetative cover within one year. Long-term and permanent impacts would preclude most natural vegetation and habitat function throughout the life of a proposed project, or longer. Examples of long-term, permanent impacts are installation of bridges or hardened low water crossings for trails that cross riparian areas and wetlands. Bridges or hardened low water crossings across creek channels will remove vegetation and the constant vehicle and foot traffic will maintain the area free of vegetation long-term.

4.3.2 Impacts Common to All Alternatives

Projects affecting waters of the State or waters of the U.S. will be subject to permitting under the California Fish and Game Code and Federal Clean Water Act (CWA). Federal CWA permitting is required for projects that would place dredged or fill material into jurisdictional waters of the U.S. State authorization is required if projects would substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

In addition to the direct impacts to habitat, management activities could have several direct or indirect impacts to riparian area and wetland vegetation and habitat. Due to the presence of state endangered aquatic species every effort will be made work with partners to build bridges, boardwalks or other trail features to carry visitors safely across perennial streams and wetlands. Management action MA-RIP-2, which applies to Alternatives B, C and D will reduce impacts to riparian areas from new surface disturbance and/or facilities.

Partnerships can be utilized to reduce the impact of visitors on water quality, soils, and riparian areas will reduce the extent of the impact on the sensitive fish and wildlife it supports.

Recreational users will increase the:

- Introduction or spread of non-native plant and wildlife species and pathogens;
- Dust and other airborne particulates caused by project activities or vegetation removal;
- Siltation and anthropogenic material in waterways (plastics etc.)

Long-term changes in average annual precipitation and average annual temperature are likely to result in increased aridity with more frequent and severe droughts (Field et al. 2016). The current 'business as usual' greenhouse gas emissions scenario model is Relative Concentration Pathway (RCP) 8.5 (Cal-Adapt 2019).

Consensus of scientific models for RCP 8.5, for C-CD through the year 2100, suggest a sharp increase in average annual temperature from 57°F to 63°F (+6°F; much warmer) and a modest increase in average annual precipitation of 3 to 5 inches (slightly wetter; Field et al. 2016; Thorne et al. 2016; Beck et al. 2018; Cal-Adapt 2019).

Vulnerability to the long-term changes in average annual precipitation and average annual temperature varies widely by species, according to ranges of tolerance to abiotic and biotic conditions for each species, and interaction among these inherent ranges and other changes throughout the environment. Retention of biological connectivity and facilitation of wildlife movement among habitat areas (migration corridors) is the primary mitigation strategy to minimize expected effects of these changes to biological resources. Many species or populations may need to move on a regional scale from areas of declining habitat suitability to areas of stable or increasing habitat suitability. The effects of long-term changes in average annual precipitation and average annual temperature will have unavoidable impacts on regional biological connectivity.

4.3.3 Alternative A

Recreation

Long-term, permanent impacts from the construction of new Day Use Sites including Swanton Gate and Bonny Doon comprises 1.75 acres total. Of the total area of long-term, permanent impacts, 0.4 acres is riparian area.

Long-term, permanent impacts from the construction of new trails comprises 0.84 acres total. Of the total area of long-term, permanent impacts, 0.59 acre is riparian area. There will be long-term, permanent impacts on one crossing (riparian zone) for the new trail at Liddell Creek – 120 square feet total (0.002 acre). The BLM would incorporate PDF's to minimize or avoid impacts on the streams and the riparian areas which support state endangered species. This total is included in the 0.59 acre of riparian area impact. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and therefore there will be no new impacts at that crossing.

Increased public access will increase the potential for introduction of additional non-native plant species (weeds), thereby displacing native vegetation and potentially resulting in adverse impacts to riparian areas and wetlands.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Reduction of the total area of impacts, 3.20 acres is riparian area and 0.06 acre is perennial wetland. Over time, the effects of the roads on streams or wetlands would be reduced by replacing old culverts to foster habitat connectivity; and the placement of drainage structures to reduce runoff into streams, or other similar activities.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments (1,167 acres total) would have continued, long-term, moderate, localized, negative impacts to riparian areas and wetlands due to degradation (trampling) of vegetation and soil. There is currently no corridor fencing along the majority of the riparian areas and wetlands to prevent cattle trampling impacts. The exclusion of herbicide use as a vegetation management method would have long-term, moderate, adverse impacts on individual species and species habitat in riparian areas and wetlands. Non-native plant species may continue to spread and the spread of these weeds would continue to displace (outcompete) native plant species and modify habitat structure, thereby negatively impacting native plant species.

Special Management Areas

No designation of Special Management Areas would have no effect on riparian areas and wetlands.

4.3.4 Alternative B

Recreation

Long-term, permanent impacts from the construction of new trails comprises 9.18 acres total. Of the total area of impacts, 0.18 acre is riparian area and 0.01 acre is perennial wetlands. There will be long-term, permanent impacts on one new crossing (riparian zone) for the new trail at Agua Puerca Creek – 120 square feet total (0.002 acre). This total is included in the 0.18 acre of riparian area impact. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and the new trail at Yellow Bank Creek will also use an existing feature (earthen dam) to cross the creek. Therefore, there will be no new impacts at those two crossings.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Of the total area of long-term, permanent impacts, 3.20 acres is riparian area and 0.06 acre is perennial wetland. The BLM would seek opportunities to coordinate with other agencies and partners to address sections of roads such as culverts or drainage structures that block fish passage or contribute sediment to the streams.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of fences to exclude cattle from riparian areas and wetlands would have long-term, moderate, localized, beneficial effects by preventing trampling. Along with the fence construction, waterlines, troughs, and water tanks would be installed for cattle use. The inclusion of herbicide use as a vegetation management method would have long-term, moderate, beneficial effects on individual species and species habitat in riparian areas and wetlands. Herbicide use would provide a more targeted method to control specific weeds, such as cape ivy. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to riparian areas and wetlands.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on riparian areas and wetlands in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**).

4.3.5 Alternative C

Recreation

Long-term, permanent impacts from the construction of new trails comprises 11.49 acres total. Of the total area of impacts, 0.24 acre is riparian area and 0.01 acre is perennial wetland. There will be long-term, permanent impacts on two new crossings (riparian zones) for the new trails at Agua Puerca Creek and East Liddell Creek– 240 square feet total (0.006 acre). This total is included in the 0.24 acre of riparian area impact. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and the new trail at Yellow Bank Creek will also use an existing feature (earthen dam) to cross the creek. Therefore, there will be no new impacts at those two crossings.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Of the total area of impacts, 3.20 acres is riparian area and 0.06 acre is perennial wetland. The

BLM would seek opportunities to coordinate with other agencies and partners to address sections of roads such as culverts or drainage structures that block fish passage or contribute sediment to the streams.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of fences to exclude cattle from riparian areas and wetlands would have long-term, moderate, localized, beneficial effects by preventing trampling. Along with the fence construction, waterlines, troughs, and water tanks would be installed for cattle use. The inclusion of herbicide use as a vegetation management method would have long-term, moderate, beneficial effects on individual species and species habitat in riparian areas and wetlands. Herbicide use would provide a more targeted method to control specific weeds, such as cape ivy. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to riparian areas and wetlands.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on riparian areas and wetlands in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**).

4.3.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Long-term, permanent impacts from the construction of new trails comprises 11.61 acres total. Of the total area of impacts, 0.24 acre is riparian area and 0.01 acre is perennial wetland. There will be long-term, permanent impacts on two new crossings (riparian zones) for the new trails at Agua Puerca Creek and Upper Yellow Bank Creek – 240 square feet total (0.006 acre). This total is included in the 0.24 acre of riparian area impact. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and the new trail at Lower Yellow Bank Creek will also use an existing feature (earthen dam) to cross the creek. The creation of the trails down to the earthen dams will increase erosion and sedimentation of the stream. Therefore, these two crossings will cause soil compaction in the riparian areas and soil loss as the trail is forged across the earthen dam.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Of the total area of long-term, permanent impacts, 3.20 acres is riparian area and 0.06 acre is perennial wetland. The BLM would seek opportunities to coordinate with other agencies and partners to address sections of roads such as culverts or drainage structures that block fish passage or contribute sediment to the streams. This coordination can take place on the BLM lands such as county-maintained bridges, as well as throughout the watersheds, such as improvements that will be made to Highway 1 over time.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of fences to exclude cattle from riparian areas and wetlands would have long-term, moderate, localized, beneficial effects by preventing trampling. Along with the fence construction, waterlines, troughs, and water tanks could be installed for livestock use. The inclusion of herbicide use as a vegetation management method would have long-term, moderate, beneficial effects on individual species and species habitat in riparian areas and wetlands. Herbicide use would provide a more targeted method to control specific weeds, such as cape ivy. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to riparian areas and wetlands. Native Bees are negatively affected by Glyphosate (Motta et al. 2018, Sponsler et al. 2019). Surveys for these bees should be done and the phenology of their nectar sources assessed prior to planning spraying.

Since bees track their nectar sources and these shift as the season progresses a time for spraying could be worked out so as not to impact native bees. These species use wet areas as many of the species they rely on need moisture. Bees will benefit in the long run by restoration of native riparian vegetation.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on riparian areas and wetlands in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**).

4.4 Biological Resources – Fish and Wildlife

4.4.1 Introduction

This section discusses impacts on wildlife species, along with applicable mitigation. The analysis of direct and indirect effects is focused on species, populations, individual animals, and habitats within the planning area. Examples of direct, adverse impacts to individual fish and animals include mortality, injury, or displacement; disruption of essential wildlife behaviors such as feeding, breeding, and sheltering; and disturbance to animals and habitat from noise, light, or dust. These impacts may be temporary (spontaneous or seasonal) or permanent (sustained and constant). An example of direct, adverse, temporary impact to fish and wildlife is hunting. Another example of direct, adverse, permanent impacts to fish and wildlife is recurring human and dog presence on recreational trails, which influences wildlife behavior.

Direct, adverse impacts to fish and wildlife habitat includes significant disturbance or modification of physical and biological characters that result in a habitat condition that is suboptimal to entirely unsuitable to support the species. These impacts may be temporary (seasonal) or permanent. An example of indirect, adverse, temporary impact to habitat include seasonal sediment pulses to streams during the winter rainy season, which degrades water quality, which in turn adversely impacts individual aquatic species. An example of direct, adverse, permanent impact to habitat includes stream channel modification, such as culverts and dams, that change the stream bed properties and flow, which in turn adversely impacts upstream migration of aquatic species. Analysis of the effects of herbicide application on Fish and Other Aquatic Organisms and Wildlife is provided in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

Assumptions

The term habitat refers to the biotic and abiotic environment and ecological conditions where a species is found. One major component of most wildlife habitat is vegetation. Vegetation reflects many aspects of habitat, including regional climate, physical structure, and biological productivity and food resources for many wildlife species. Thus, vegetation is a useful overarching descriptor for habitat, and it is the primary factor in analysis of impacts to wildlife habitat. Impacts to vegetation communities and habitat are discussed in the previous sections. Another component of habitat of particular importance to wildlife is water, in the form of the six perennial streams, springs, and ponds onsite, which provide both habitat and drinking water to all of the species utilizing these aquatic habitats. Soils also constitute a major component of habitat.

Riparian areas, besides directly providing high-quality habitat for a host of wildlife species, also act as wildlife corridors allowing animals to migrate and disperse. Migration and dispersal promote the establishment of metapopulations, wherein a number of linked subpopulations are able to recolonize each other following local extirpation or receive increased gene diversity.

Impacts to wildlife and habitat from recreation activities of each alternative would be generally similar with variation depending on the types and degree of activities allowed.

Direct, adverse impacts to populations include effects leading to abandonment of breeding areas, such as a pond or creek in the case of aquatic species, or the cessation of nesting by one or more bird species.

Direct, adverse effects to species include major declines in species, regarded as a whole, as a result of impacts to local populations as described above. For example, the cessation of breeding by California red-legged frogs at C-CD would significantly delay or even preclude the recovery and delisting of the species.

The special hunt program proposed for Alternatives B, C and D would be managed in partnership between the BLM and California Department of Fish and Wildlife (CDFW). The program would be established to meet public demand for this activity, while ensuring public safety by avoiding conflicts with other

recreationists and adjacent landowners. The number of hunting permits to be issued - based on a lottery system – would be similar to Canada de Los Osos in Santa Clara County. On that property, the CDFW hosts five permitted-hunts each year with two turkey hunts, two pig hunts and one deer hunt. Each hunt is a two-day period. For C-CD, the BLM and CDFW anticipate the number of hunters for each hunt would be 2-4 people. For native species (deer), CDFW and BLM would partner on baseline and annual surveys in the area to determine how many individuals could be sustainably taken on an annual basis. The impacts analysis, therefore, assumes that annual authorized take of deer will result in a negligible adverse impact on the regional deer population.

Best Management Practices (BMP) and Standard Operating Procedures (SOP)

The BMPs and SOPs for this RMPA (**Appendix D**):

- Delineate areas where certain recreational uses are authorized or not authorized, considering whether specific areas are known, or predicted, to be of greater importance to native wildlife.
- Use seasonal restrictions to protect nesting raptors.
- Construct all facilities and structures in conformance with wildlife protection guidelines. Design all new facilities with measures to reduce hazards to wildlife.
- Control vehicle speeds on all administrative routes to minimize potential for roadkill, dust, and to protect sensitive animals and habitats. Use existing roads to the greatest extent practicable.

4.4.2 Impacts Common to All Alternatives

When compared to many other areas in the central coast of California, wildlife species at C-CD have been relatively free of influence from development and other human activities over the course of the past century. Historically, row crop agriculture, dairying operations, mining, and timber harvesting have adversely impacted habitats on C-CD. Many of these activities ceased years or even decades before BLM acquired the lands in 2014. Therefore, habitats onsite are considered to be recovering and providing wildlife habitat. It is anticipated the majority of habitat onsite will continue to improve over time if conditions remain suitable and additional impacts are minimized. Since 2014 recreational opportunity for the public have been limited to a handful of guided tours and special events. Therefore, the type and degree of the recreational uses discussed in this plan would introduce novel effects on wildlife populations. Given the land use history of C-CD and connectivity to regional conservation lands, the local populations of native wildlife species will benefit from continuing efforts to sustain large blocks of contiguous habitats in this region.

Habitat fragmentation occurs when development or other disturbance divides habitat that was once contiguous into separate and smaller sections. This indirectly affects wildlife movement and the viability of the habitat to support various species. Fragmentation also increases the proportion of disturbed edge habitat to undisturbed interior habitat (edge effect) (Wilcove et al. 1986). Habitat fragmentation resulting from development of trails and other infrastructure may cause a shift in wildlife species composition. Fragmentation favors common habitat generalists, such as raccoon (*Procyon lotor*) and American crow (*Corvus brachyrhynchos*), over more specialized, and typically rarer species (Brittingham, no date). Development may result in a shift in biological diversity and local declines in some fish and wildlife populations (Gilbert and Chalfoun 2011).

Development activities located on previously disturbed sites or on non-native vegetation would generally have less effect on wildlife movement and habitat fragmentation than activities within or adjacent to disturbed habitats or habitats with native vegetation. Impacts anticipated to different habitat types are described in more detail in previous sections of this chapter. Locating new facilities in proximity to existing roads and infrastructure would also reduce long-term impacts to fish and wildlife. Short-term and temporary effects, such as noise from construction and maintenance, generally would not have important or lasting effects on wildlife movement and habitat fragmentation if adequate PDFs and BMPs are implemented.

The CZU Lightning Complex burned 86,509 acres, and is by far the largest wildfire in recent history in the Santa Cruz/San Mateo County region. Approximately 1,052 acres of C-CD burned in this fire in the Molino, Agua Puerca, and San Vicente watersheds (**Figure 14**). The important ecological role of fire in maintaining habitat diversity, nutrient cycling and wildlife habitat creation, suggests that the CZU Lightning Complex will not have long-term detrimental ecological effects to fish and wildlife. A short-term detrimental impact is anticipated for reptiles, terrestrial amphibians, and small mammals. However, the return to an earlier successional stage may lead to a short-term increase in some species.

Given that recreational use of C-CD has been minimal to date, all four alternatives would increase visitor use through the development and use of trails. This increase in use is anticipated to have adverse impacts on sensitive and other wildlife species. The degree of impact is relative to the degree of recreational use, the types of uses authorized, and the specific areas in which each use will be authorized. Additional factors such as the seasonality of uses are important to consider because several species have limited breeding seasons.

The BLM's deed restrictions prohibit motorized recreation and off-road vehicle use, with the exception of emergencies and authorized uses, which will help minimize long-term impacts on fish and wildlife and their habitats.

There are five main ways that recreationists influence wildlife: 1) harvesting (i.e. hunting and poaching); 2) habitat modification; 3) pollution (litter and human food waste); 4) disturbance (via coming close to wildlife, entering animal's field of view, causing noise near animals); 5) introduced species and pathogen introduction (Knight and Cole 1991; Soulard 2017).

There have been several recent literature reviews evaluating impacts of recreation on wildlife that are informative to the management of C-CD (Reilly et al. 2017; Larson et al. 2016). The studies considered in these reviews indicate that land managers can reduce potential impacts of recreation on wildlife by creating trail-free buffers, and maintaining habitats free of domestic dogs (Reilly et al. 2017).

The extent to which the introduction of parking lots, trails, and recreational usage of these facilities will impact each native wildlife species and their populations currently utilizing C-CD will vary and is not easily predictable. However, the degree of impact of recreation to wildlife associated with the proposed long-term and chronic recreational use is predicted to be highest in the areas which are closest to these proposed trails and parking areas. **Figures 12a, 12b, 12c, and 12d (Appendix A)** depict C-CD with buffer zones of 25, 50, 100, 200, and 500 meters surrounding the proposed trails and parking areas for each Alternative. The acreage numbers associated with each scenario are an indication of the areas anticipated to be the most directly affected by recreational uses (**Table 4.2.2-1**). This is not to say that all impacts to wildlife will be confined to these buffer zones. For example, introduction of trash is anticipated to increase corvid numbers, and corvids' ability to fly means that their impact can be felt outside of these buffer zones. Alternative A depicts 1097 acres (18.9% of the overall acreage) that are anticipated to be within the 500 meter buffer zone, which is the least of the three proposed scenarios. Alternative B depicts a greater area of anticipated impact than Alternative A at 2484 acres (42.8% of overall acreage), though a lesser area of anticipated impact than Alternative C, which depicts 3496 acres (60.3% of overall acreage), or Alternative D with 3,106 acres (51.6% of overall acreage).

In addition, each alternative is anticipated to have a different degree of long-term impact on wildlife due to the spatial distribution of the trails and parking areas throughout the habitats existing onsite, since the proposed trail and parking system spreads to different areas under each scenario. The degree of spatial distribution of trails is anticipated to impact wildlife adversely as well, with Alternative A anticipated to have the least impact on wildlife, Alternative B having a higher anticipated impact, and Alternative C having the highest anticipated impact. As depicted in **Table 4.2.2-1**, the impacts to wildlife anticipated with Alternative D, the preferred alternative, are higher than Alternative B, and lower than Alternative C.

Table 4.2.2-1. Area (acres) and Percent of Area Within Buffer Distances of Proposed Recreational Development

Buffer Distance	Alternative A	Alternative B	Alternative C	Alternative D
25 meters	52 (0.9%)	347 (6.0%)	507 (8.7%)	486 (8.3%)
50 meters	106 (1.8%)	653 (11.3%)	943 (16.3%)	866 (14.8%)
100 meters	216 (3.7%)	1,093 (18.9%)	1,615 (27.9%)	1,404 (24%)
200 meters	449 (7.7%)	1,603 (27.6%)	2,364 (40.8%)	1,993 (34.1%)
500 meters	1,097 (18.9%)	2,484 (42.8%)	3,496 (60.3%)	3,106 (51.6%)

Larson et al. (2019) conducted an extensive literature review on the topic of the effects of recreation on vertebrate wildlife species. The results of this meta-analysis were that vertebrate abundance and richness are lower where levels of recreation are higher in the majority (70%) of cases. The study concludes that land managers should set aside areas that are not open to recreation to minimize trade-offs between recreation and wildlife conservation as a means of balancing these dual land uses. Under all alternatives, the BLM would avoid habitat fragmentation or other human-caused disturbances in significant portions of C-CD.

Larsen et al. (2019) also recommend recreation planning at a regional level to be effective at larger scales. Given that C-CD is connected to a broader network of protected areas, including the adjacent San Vicente Redwoods property, the areas currently providing refuge from recreational impacts on BLM lands will continue to provide important habitat and corridors for wildlife movement in this region. Setting aside low-use areas is also consistent with a metapopulation approach to conservation, which entails setting aside islands of occupied habitat linked by corridors.

Introduction of domesticated animals associated with recreation to C-CD is anticipated to provide opportunities for the spread of pathogens to wildlife. For example, one study noted a higher degree of diseases associated with domestic dogs and cats in bobcats and grey foxes in urban zones than in rural zones (Riley 2004). The dusky-footed woodrat (*Neotoma fuscipes*), a Species of Special Concern in California, has been associated with a disease spread among woodrats, horses and dogs (Nieto et al. 2010). Quinn et al. (2012)'s results indicate that badgers, a Species of Special Concern in California, had been exposed to spillover diseases associated with domestic animals. Bobcats, grey foxes, dusky-footed woodrat, and badgers are all species known to utilize areas of C-CD.

Studies reviewed by Gaynor et al. (2018) demonstrate wildlife often shift their activities from daytime to nighttime to seek refuge from daytime human presence and activities, which is a negative impact due to changes such as increased risk of predation and decreased foraging efficiency. All alternatives are predicted to influence wildlife to shift daytime activities to nighttime activities to varying degrees. It is predicted that the overall impacts to wildlife associated with recreation under all Alternatives would be reduced by not including, or by reducing, nighttime recreational activities onsite.

Wildlife species differ in their ability to become habituated to human presence. In general, however, human presence has a less adverse impact on wildlife when it is temporally and spatially predictable. Recreationists who stay on existing trails have a lesser negative impact on wildlife than recreationists who wander from the trail (Miller et al. 2001; Taylor and Knight 2003; Soulard 2017). Several studies have indicated that fear of humans alters wildlife behaviors, which can have cascading effects throughout an ecosystem (Suraci et al. 2019). For example, Smith et al (2017) demonstrates mountain lions fear people, which results in mountain lions fleeing their kill sites when humans are nearby and possibly killing up to 50% more deer a year as a result of this reduced feeding time at kills (Smith, Wang & Wilmers 2015), and increasing the energetic expenditure of mountain lions (Wang, Smith & Wilmers 2017).

On the other hand, recent studies published in the California Fish and Wildlife Journal (Townsend et. al. 2020) examined changes in wildlife trail use and occupancy after a park opened to the public for the first time. To see if wildlife would alter either their use of the trails or the surrounding areas or both in response to visitor use Townsend compared the findings from before and after the park opened to the public. Similar to the BLM's expectations for C-CD, recreational trail use increased sharply after opening and then lessened but remained higher than prior to opening.

According to the study, bobcat (*Lynx rufus*), coyote (*Canis latrans*) and gray fox (*Urocyon cinereoargenteus*) did not alter trail use relative to study area occupancy; black-tailed deer (*Odocoileus hemionus*) and gray squirrel (*Sciurus griseus*) altered trail use, and puma (*Puma concolor*) and wild turkey (*Meleagris gallopavo*) altered both trail and study area use. However, after approximately 9 months of public access, wildlife trail detection rates for all species return to the pre-opening levels, except for the raccoon (*Procyon lotor*) and wild turkey.

There is little research indicating the effect of trail-based recreation on bats. Many species of bats, including little brown bats (*Myotis lucifugus*), are thought to benefit from open habitat edges including trails and other linear features (Krusic et al. 1996; Soulard 2017).

Mule deer, which are found on C-CD, respond more negatively to off-trail recreationists than to on-trail recreationists (Taylor and Knight 2003). Wildlife may be able to become more habituated to on-trail recreation because it is more predictable, occurring frequently and along a predictable spatial line (Knight and Cole 1995a, Whittaker and Knight 1999, Talor and Knight 2003). Ungulates, including mule deer, may also be more adversely impacted by recreationists approaching from above than by recreationists approaching from the same or a lower level of terrain (Taylor and Knight 2003).

Like mule deer, many passerine species show a lesser response to recreationists who are on established trails than to recreationists off of official trails (Miller et al. 2001). In general, birds that forage or nest on the ground have greater responses to the presence of recreationists than birds who forage or nest higher in the canopy (Soulard 2017). Birds may avoid nesting near trails although it is unclear whether this is a result of the presence of the trails or whether it is a result of increased human disturbance along the trail (Miller et al. 1998). Locating trails along the edges of habitats (e.g. along the edges of forests/grasslands) may reduce the impact to bird communities.

Brown-headed cowbirds, a brood-parasitic species, utilize habitat edges and have been observed to utilize trails to access hosts that are less well adapted to brood-parasitism and may therefor lack adequate defense strategies (see Miller et al. 1998). Brood parasitism by brown headed cowbirds can contribute to reductions in other passerine species such as Nuttall's white-crowned sparrow (Trail and Baptista 1993). Although possible, it is not anticipated that planned trails at C-CD will result in significant changes to cowbird abundance or distribution as few researchers outside of eastern deciduous forests have observed changes along trails (see Miller et al. 1998).

Introduction of dogs would be expected to have adverse effects on wildlife, which perceive dogs as a threat and react accordingly, such as by exhibiting vigilance and/or flight behaviors. Studies have shown that, even when on-leash, dogs displace birds, causing direct, short-term, adverse impacts (Banks & Bryant 2007). Literature reviews regarding the influence of dogs on wildlife indicate the majority of studies on this topic demonstrate some level of wildlife disturbance (Weston and Stankowich 2014). Several studies demonstrate population-level disturbance (Gill et al. 1996). Dogs can also cause indirect, adverse impacts on bird populations in the long term because even temporary displacement leaves both birds and their nests vulnerable to predation by predators such as corvids. The presence of dogs also has a short-term, localized, minor adverse impacts on larger mammals such as deer (Taylor et al. 2005). In addition, there are hundreds of pathogens shared between domestic dogs and wildlife (Knobel et al. 2014). The three parasites of most concern to resource managers are rabies virus, canine distemper virus, and canine parvovirus (Knobel et al.

2014). In addition, given that feces are often distributed through stormwater, locations where dogs are authorized or not authorized area important to consider (Hennings 2016).

A free-ranging dog is any dog that is not contained, including wild, feral, stray, and street dogs, or any dogs allowed to come and go freely by their owners. Free ranging dogs have been documented to have adverse impacts on wildlife (Gompper et al. 2014). Therefore, under none of the Alternatives would BLM authorize or condone free-ranging dogs, or any other free-ranging domesticated animals or pets to utilize C-CD, regardless of land and pet ownership proximity to these lands.

Project Design Features

Utilization of Project Design Features (PDF) (**Appendix D**) would benefit native populations and habitats at the local and landscape scales by eliminating or reducing negative impacts stemming from development. Species-specific surveys, species avoidance, habitat protection measures would also minimize impacts of management actions on special status species.

4.4.3 Impacts of Alternative A (No Action)

Recreation

Long-term, permanent impacts to habitat from the construction of new Day Use Sites including Molino Creek Gate and off Bonny Doon Road comprises 1.75 acres total. Of the total area of impacts, 0.4 acre is riparian area and 1.35 acres is non-native grassland.

Long-term, permanent impacts to habitat from the construction of new trails comprises 0.84 acres total. Of the total area of impacts, 0.59 acre is riparian area, 0.05 acre is coastal scrub and 0.21 acre is conifer forest. The trails in the conifer forest will create an open edge effect which may lead to slight modifications in wildlife use and presence in this area. However, the acres affected are small and are likely to have negligible to minor long-term adverse direct impacts to wildlife. Salamander and newt species may benefit slightly from construction of trails in forested environments as the movement of wood from the trail to trail edges can create microhabitats for these species.

There will be long-term, permanent impacts on one new crossing (riparian zone) for the new trail at Liddell Creek – 120 square feet total (0.002 acre). This total is included in the 0.59 acre of riparian area impact. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and therefore there will be no new impacts at that crossing.

Since there are fewer trails and areas available for recreation, it is anticipated that there would be fewer recreationists under Alternative A, than under Alternative B, C, and D (**Appendix G**). The length, dispersal and reach, and influence of trail users onsite to wildlife is lowest under Alternative A (**Table 4.2.2-1** and **Figure 12a**). Therefore, it is anticipated that there would be a lesser degree of disturbance to wildlife under Alternative A because fewer wildlife are likely to be impacted via interaction with recreationists.

Introduction of dogs in Alternative A would be expected to have adverse effects on wildlife, which perceive dogs as a threat and react accordingly, such as by exhibiting vigilance and/or flight behaviors.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Of the total area of existing impacts, 0.79 acre is weedy/ruderal patch, 3.01 acres is non-native grassland, 4.21 acres is native grassland, 0.98 acre is coyote brush encroachment, 7.60 acres is coastal scrub, 2.41 acres is coast live oak, 0.04 acre is chaparral, 0.06 acre is broadleaf forest, 7.46 acres is conifer forest, 3.53 acres is quarries (abandoned), 3.20 acres is riparian area, and 0.06 acre is perennial wetland.

The administrative route network is considered to be part of the environmental baseline conditions. Continued use of this administrative route network would have adverse impacts to wildlife species associated with these habitat types, but the additive effects are anticipated to be negligible if all vehicles are cautious to avoid direct wildlife mortality by driving slowly, and because these administrative routes have already been used infrequently for ranching and agriculture for decades.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

There is currently no corridor fencing along riparian areas and wetlands to prevent cattle from accessing these areas. Under Alternative A, continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments (1167 acres total) would have continued, long-term, moderate, localized, adverse impacts on fish and wildlife species associated with riparian areas and wetlands due to degradation (trampling) of vegetation and soil.

On the other hand, continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments (1,167 acres total) would have long-term, beneficial effects on wildlife species associated with the grasslands by reducing encroachment of woody species onto these grasslands.

The exclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, adverse impacts on fish and wildlife habitat. Non-native plant species will continue to spread, and the spread of these weeds would continue to displace (outcompete) native plant species. No potential direct adverse effects of herbicide chemicals on individual fish or wildlife species would occur, but the potential adverse effects of non-native plant species on their habitat may be greater than that which could occur from direct herbicide exposure on the individual species. The continued exclusion of fire from the wildfire adapted vegetation types would result in continued fuel load accumulation and suppressed regeneration and recruitment, likely resulting in a trend towards slow, long-term habitat degradation.

Special Management Areas

No designation of Special Management Areas would have no effect on fish and wildlife species.

4.4.4 Impacts of Alternative B

Recreation

Long-term, permanent impacts to habitat from the construction of new Day Use Sites at Warrenella Road Gate, Warrenella Road Top and Marina Ranch Gate comprises 8.03 acres of total graded area. There would be an additional 2.42 acres within the area proposed to be fenced around these day use facilities, which are located on non-native grassland. All three sites are in close proximity to existing disturbances (Cement Plant Road, US Highway One and the PG&E power substation), which will minimize (but not eliminate) permanent, adverse impacts from habitat fragmentation.

Long-term, permanent impacts from the construction of new trails comprises 9.18 acres total. Of the total area of impacts, 0.74 acre is weedy/ruderal patch, 4.39 acres is non-native grassland, 0.31 acre is native grassland, 0.96 acre is coyote brush encroachment, 1.55 acres is coastal scrub, 0.33 acre is coast live oak woodland, 0.11 acre is chaparral, and 0.62 acre is conifer forest. There will be long-term permanent adverse impacts to wildlife species associated with these habitat types, but the effects would be minor due to application of the measures outlined in **Appendix D** and because this represents only a small percent of the overall habitat for fish and wildlife at C-CD.

Of the total area of impacts, 0.18 acre is riparian area and 0.01 acre is perennial wetlands. There will be long-term, permanent adverse impacts on fish and wildlife at one new crossing (riparian zone) for the new trail at Agua Puerca Creek – 120 square feet total (0.002 acre). This total is included in the 0.18 acre of

riparian area impact. However, effects would be minor due to application of the measures outlined in **Appendix D** and because this represents only a small percent of riparian and aquatic habitat at C-CD. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and the new trail at Yellow Bank Creek will also use an existing feature (earthen dam) to cross the creek. Therefore, there will be no new impacts at those two crossings.

Compared to Alternative A, there would be an increased number of visitors under this alternative (**Appendix G**). Studies have shown that human disturbance to birds increases as the number of visitors increases (Beale and Monaghan 2004). The requirement that visitors stay on designated trails, with associated education and enforcement, may reduce this impact, particularly for species which are more likely to become habituated to human presence. Studies have shown that human disturbance to birds increases as the number of visitors increases (Beale and Monaghan 2004) and that some bird species have increased predation and decreased nest survival and nest density near trails (Miller et al. 1998; Reidy et al. 2009)). Trail placement and educational programs that encourage recreationists to stay on designated trails may help reduce the impacts of recreation on wildlife as wildlife exhibit less disturbance from recreationists on trail than off-trail (Mallord et al. 2006; Miller et al. 2001; Taylor and Knight 2003; Soulard 2017).

The length, dispersal and reach, and influence of trail users onsite to wildlife is higher under Alternative B than under Alternative A (**Table 4.2.2-1** and **Figure 12b**). Therefore, it is anticipated that there would be a greater degree of disturbance to wildlife under Alternative B because more wildlife is likely to be impacted via interaction with recreationists. On the other hand, under Alternative B the BLM would prohibit trail and recreation facility development within a large portion of C-CD (RMZs 2 and 4 = 3,261 acres, 56%) and manage these areas as core wildlife protection zones. The protected area of RMZ2 would connect to adjacent protected areas on the adjacent San Vicente Redwoods property. This would have a long-term permanent beneficial impact on fish and wildlife species.

However, the establishment and use of trails may help to reduce the adverse impact on wildlife, particular for species which more readily habituate to human presence, as this may help limit disturbance more than open access to the same corridors (Mallord et al. 2006; Miller et al. 2001; Taylor and Knight 2003; Soulard 2017).

Mountain bikers are expected to have a similar to slightly lower impact on wildlife disturbance than hikers (Soulard 2017; Taylor and Knight 2003). Horses can attract brown-headed cowbirds and potential predators of some songbirds, particularly where corrals and stables are present (Huddart and Stott 2019). Introduction of these two uses under Alternative B would result in additional impacts as compared to Alternative A.

The presence of dogs under Alternative B would have similar effects on native wildlife as Alternative A.

Camping will result in adverse impacts to wildlife. The degree of severity corresponds to the degree of camping authorized. Campsites and associated facilities would introduce impacts which negatively impact wildlife by generating trash, as well as introducing daytime and nighttime noise, and nighttime light. Trash attracts high numbers of corvids and predators (e.g. skunks, raccoons, bobcats, coyotes, mountain lions). As camping is proposed for very limited purposes under Alternative B this will have a minor impact on wildlife but will be greater impact on wildlife than the no camping scenario proposed under Alternative A.

The special hunt program proposed for Alternative B would be managed in partnership between the BLM and California Department of Fish and Wildlife (CDFW). The number of hunting permits to be issued - based on a lottery system - would be similar to Canada de Los Osos in Santa Clara County. On that property, the CDFW hosts five permitted-hunts each year with two turkey hunts, two pig hunts and one deer hunt. Each hunt is a two-day period. For C-CD, the BLM and CDFW anticipate the number of hunters for each

hunt would be 2-4 people. For native species (deer), CDFW and BLM would partner on baseline and annual surveys in the area to determine how many individuals could be sustainably taken on an annual basis. Therefore, the annual authorized take of deer would only have minor adverse impacts on the C-CD deer population. Hunting of non-native species (pigs and turkeys) would be considered a beneficial effect on fish and wildlife.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Impacts would be the same as described for Alternative A.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments (2229 acres total) would have long-term, beneficial impacts on wildlife associated with grasslands. The beneficial effects would include enhanced diversity and structure of the grassland community (Hayes and Holl 2003). Installation of water troughs in uplands, and improved fences to better distribute livestock grazing should have moderate to major, long-term, beneficial effects on wildlife species associated with grasslands due to better distribution of livestock and enhanced utilization of available forage.

Installation of fences, to exclude cattle from riparian areas and wetlands would have long-term, moderate, localized, beneficial effects on fish and wildlife species associated with these habitats by preventing trampling. Installation of waterlines, troughs, and tanks to provide water for cattle instead of having them access riparian areas and wetlands, would have long-term, moderate, localized, beneficial effects on fish and wildlife species associated with these habitats by preventing trampling.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, beneficial effects on fish and wildlife habitat. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types (habitat), such as thistles in grasslands and cape ivy in riparian areas and wetlands. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse direct impacts to individual fish and wildlife species and their habitat. Prescribed fire would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, control non-native plant species, and to restore native grasslands and coastal scrub, thereby improving habitat for wildlife species.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on fish and wildlife species in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**).

4.4.5 Impacts of Alternative C

Recreation

Long-term, permanent impacts from the construction of new Day Use Sites including Swanton Gate, Warrenella Gate, Warrenella Top and Marina Ranch comprises 10.74 acres total. The entire 10.74 acres is non-native grassland. In addition, all four sites are located in close proximity to existing disturbance (Swanton Road, Cement Plant Road, US Highway One and the PG&E power substation), which will minimize (but not eliminate) permanent, adverse impacts from habitat fragmentation.

Long-term, permanent impacts from the construction of new trails comprises 11.49 acres total. Of the total area of impacts, 0.77 acre is weedy/ruderal patch, 4.39 acres is non-native grassland, 0.69 acre is native grassland, 0.97 acre is coyote brush encroachment, 3.29 acres is coastal scrub, 0.33 acre is coast live oak, 0.11 acre is chaparral, 0.70 acre is conifer forest, 0.24 acre is riparian area, and 0.01 acre is perennial wetland. There will be long-term permanent impacts to wildlife species associated with these habitat types, but the effects would be minor due to application of the measures outlined in **Appendix D** and because this represents only a small percent of the overall habitat for fish and wildlife at C-CD.

There will be long-term, permanent adverse impacts on fish and wildlife from two new crossings (riparian zones) for the new trails at Agua Puerca Creek and East Liddell Creek– 240 square feet total (0.006 acre). This total is included in the 0.24 acre of riparian area impact. However, effects would be minor due to application of the measures outlined in **Appendix D** and because this represents only a small percent of riparian and aquatic habitat at C-CD. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and the new trail at Yellow Bank Creek will also use an existing feature (earthen dam) to cross the creek. Therefore, there will be no new impacts at those two crossings.

Overall, there would be more miles and acres of trail under Alternative C than under Alternatives A and B (**Table 2**). It is reasonable to assume that there would also be more recreationists under Alternatives C than under Alternatives A, or B (**Appendix G**), with a correspondence increase in adverse impacts to wildlife through disturbance. While mountain bikers would be limited to designated trails under Alternative C, hikers and horseback riders would not be limited to designated trails. Therefore, impacts are anticipated to be greater than Alternatives A and B. Studies have shown that human disturbance to birds increases as the number of visitors increases (Beale and Monaghan 2004) and that some bird species have increased predation and decreased nest survival and nest density near trails (Miller et al. 1998; Reidy et al. 2009)). Trail placement and educational programs that encourage recreationists to stay on designated trails may help reduce the impacts of recreation on wildlife as wildlife exhibit less disturbance from recreationists on trail than off-trail (Mallord et al. 2006; Miller et al. 2001; Taylor and Knight 2003; Soulard 2017).

The length, dispersal and reach, and influence of trail users onsite to wildlife is higher under Alternative C than under Alternatives A and B (**Table 4.2.2-1** and **Figure 12b**). Therefore, it is anticipated that there would be a greater degree of disturbance to wildlife under Alternative C because more wildlife is likely to be impacted via interaction with recreationists. Under Alternative C the BLM would allow for some future trail development within RMZ 2, while prohibiting development within RMZ4 and manage this areas as a core wildlife protection zone (RMZs 2 and 4 = 2,249 acres, 38%). As this protection zone is smaller than that proposed under Alternative B and would not be contiguous with adjacent protected lands in San Vicente Redwoods, the beneficial effects of this action would be less than what is proposed under Alternative B.

Mountain bikers are expected to have a similar to slightly lower impact on wildlife disturbance than hikers (Soulard 2017; Taylor and Knight 2003). Horses can attract brown-headed cowbirds and potential predators of some songbirds, particularly where corrals and stables are present (Huddart and Stott 2019). The use of e-bikes under this alternative is anticipated to increase the number of mountain bikers on all trails designated for biking. As a result, the adverse impacts of introducing these uses under Alternative C is anticipated to be greater than under Alternative B.

The presence of dogs would have adverse effects on wildlife, since wildlife perceive dogs as a threat and react accordingly, exhibiting vigilance and/or flight behaviors. The establishment of off-leash areas is anticipated to have a greater adverse impact than Alternative B on smaller mammals, such as ground squirrels and field mice, which are subject to predation by dogs.

Camping would result in adverse impacts to wildlife, with the degree of severity of impact corresponding to the degree of camping authorized. As there is currently no camping authorized onsite, campsites would introduce and generate trash, light at night, and noise during the day and night. Trash attracts high numbers of corvids and predators (e.g. skunks, raccoons, bobcats, coyotes, mountain lions). Therefore, establishment of campground areas as proposed under Alternative C, are anticipated to have greater impacts than the more temporary, permitted camping opportunities proposed under Alternatives B, and a much greater impact on wildlife than the no camping scenario proposed under Alternative A. The degree of disturbance associated with campsites is anticipated to decrease to the degree that any campsites are located in closer proximity to areas with existing anthropogenic impacts, such as relatively busier roads, and residential areas, rather than areas further in the interior which currently have little to no visitation. Measures to reduce impacts associated with camping include: not authorizing campfires, and adherence to a rigorous Leave-No-Trace policy.

The impact of hunting on fish and wildlife for Alternative C would be the same as Alternative B.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Impacts would be the same as those described for Alternative A.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of fences to exclude cattle from riparian areas and wetlands would have long-term, moderate, localized, beneficial effects by preventing trampling, and reduction of sediment and manure into waterways. Installation of waterlines, troughs, and tanks to provide water for cattle instead of having them access riparian areas and wetlands, would have long-term, moderate, localized, beneficial effects on fish and wildlife species associated with these habitats by preventing trampling.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods are anticipated to have long-term, major, beneficial effects on fish and wildlife habitat. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types (habitat), such as thistles in grasslands and cape ivy in riparian areas and wetlands. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse direct impacts to individual fish and wildlife species and their habitat. Prescribed fire would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, potentially help control non-native plant species, and potentially help restore native grasslands and coastal scrub, thereby improving habitat for wildlife species.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on fish and wildlife species in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**). This beneficial effect would be less than what is proposed under Alternative B because fewer creeks (Liddell Creek, Laguna Creek) would be considered suitable under this alternative.

4.4.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Long-term, permanent impacts from the construction of new Day Use Sites including Swanton Gate, Warrenella Gate, Warrenella Top and Marina Ranch comprises 9.384 acres total. The entire 9.38 acres is non-native grassland. All three sites are located in close proximity to existing disturbances (Cement Plant

Road, US Highway One and the PG&E power substation), which will minimize (but not eliminate) permanent, adverse impacts from habitat fragmentation.

Long-term, permanent impacts from the construction of new trails comprises 11.61 acres total. Of the total area of impacts, 0.24 acre is riparian zone, 0.01 acre is perennial wetland, 0.63 acre is weedy/ruderal patch, 5.00 acres is non-native grassland, 0.34 acre is native grassland, 0.82 acre is coyote brush encroachment, 2.09 acres is coastal scrub, 0.25 acre is coast live oak, 0.26 acre is chaparral, and 1.97 acre is conifer forest. There will be long-term permanent impacts to wildlife species associated with these habitat types, but the effects would be minor due to application of the measures outlined in **Appendix D** and because this represents only a small percent of the overall habitat for fish and wildlife at C-CD.

There will be long-term, permanent impacts on two new crossings (riparian zones) for the new trails at Molino Creek and Upper Yellow Bank Creek – 240 square feet total (0.006 acre). This total is included in the 0.24 acre of riparian area impact. However, effects would be minor due to application of the measures outlined in **Appendix D** and because this represents only a small percent of riparian and aquatic habitat at C-CD. The new trail at Molino Creek will use an existing feature (earthen dam) to cross the creek and the new trail at Yellow Bank Creek will also use an existing feature (earthen dam) to cross the creek. The creation of the trails down to the earthen dams will increase erosion from the banks and sedimentation of the stream. Therefore, these two crossings will cause soil compaction in the riparian areas and soil loss as the trail is forged across the earthen dam.

Overall, there would be more miles and acres of trail under Alternative D than under Alternatives A and B and less than under Alternative C (**Table 2.**) It is reasonable to assume that there would also be similar number of recreationists under Alternatives C and D, and more than under Alternatives A or B (**Appendix G**), with a corresponding level of adverse impacts from recreationists adversely impacting wildlife through disturbance. The requirement that visitors stay on designated trails, with associated education and enforcement, may reduce this impact, particularly for species which are more likely to become habituated to human presence. Studies have shown that human disturbance to birds increases as the number of visitors increases (Beale and Monaghan 2004) and that some bird species have increased predation and decreased nest survival and nest density near trails (Miller et al. 1998; Reidy et al. 2009)). Trail placement and educational and management programs that encourage and require recreationists to stay on designated trails may help reduce the impacts of recreation on wildlife as wildlife exhibit less disturbance from recreationists on trail than off-trail (Mallord et al. 2006; Miller et al. 2001; Taylor and Knight 2003; Soulard 2017).

The length, dispersal and reach, and influence of trail users onsite to wildlife in Alternative D is lower than Alternative C, but higher than Alternatives A and B (**Table 4.2.2-1** and **Figure 12d**). Therefore, it is anticipated that there would be a greater degree of disturbance to wildlife under Alternative C than under Alternatives A and B, but less than Alternative D, because more wildlife is likely to be impacted via interaction with recreationists. Under Alternative B the BLM would prohibit trail and recreation facility development within a large portion of C-CD (RMZs 2 and 4 = 3,187 acres, 55%) and manage these areas as core wildlife protection zones. The protected area of RMZ2 would connect to adjacent protected areas on the adjacent San Vicente Redwoods property. This would have a long-term permanent beneficial impact on fish and wildlife species.

Mountain bikers are expected to have a similar to slightly lower impact on wildlife disturbance than hikers (Soulard 2017; Taylor and Knight 2003). Horses can attract brown-headed cowbirds and potential predators of some songbirds, particularly where corrals and stables are present (Huddart and Stott 2019). The use of e-bikes under this alternative may be anticipated to increase the number of mountain bikers in all trails designated for biking, more remote regions of trails which would exacerbate the impacts of mountain biking on wildlife, perhaps especially on more remote regions of trail. As a result, the adverse impacts of introducing these uses under Alternative D is anticipated to be similar to Alternative C.

The presence of dogs would have adverse effects on wildlife, since wildlife perceive dogs as a threat and react accordingly, exhibiting vigilance and/or flight behaviors. Under Alternative D, dogs would be allowed on-leash only on specifically designated trails. As a result, adverse impacts from dogs would be less under Alternative D than proposed under Alternatives B and C.

Camping will result in adverse impacts to wildlife, with the degree of severity of impact corresponding to the degree of camping authorized. As camping is proposed in very limited scenarios under Alternative D, adverse impacts would be minor and similar to Alternative B.

The impact of hunting on fish and wildlife for Alternative D would be the same as Alternative B.

Transportation and Travel Management

Long-term, permanent impacts from continued use of the Administrative route network comprises 33.36 acres total. Impacts would be the same as those described for Alternative A.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of fences to exclude cattle from riparian areas and wetlands would have long-term, moderate, localized, beneficial effects by preventing trampling, and reduction of sediment and manure into waterways. Installation of waterlines, troughs, and tanks to provide water for cattle instead of having them access riparian areas and wetlands, could have long-term, moderate, localized, beneficial effects on fish and wildlife species associated with these habitats by preventing trampling.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods are anticipated to have long-term, major, beneficial effects on fish and wildlife habitat. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types (habitat), such as thistles in grasslands and cape ivy in riparian areas and wetlands. The use of appropriate herbicide formulations, establishing buffer zones from sensitive species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse direct impacts to individual fish and wildlife species and their habitat (**Appendix F**). Native Bees are negatively affected by glyphosate (Motta et al. 2018, Sponsler et al. 2019). Surveys for these bees should be done and the phenology of their nectar sources assessed prior to planning spraying. Since bees track their nectar sources and these shift as the season progresses a time for spraying could be worked out so as not to impact native bees. Rodeo has been shown to affect larval stages of frogs and to interfere with the protective microbial film on the skin of frogs (Krynak and Benard 2017). This has the potential to expose frogs to many diseases including chytrid (McCoy and Peralta 2018). Freshwater zooplankton (found in wetlands and ponds) show toxicity dependent on the levels of application (Huarica et al. 2020). Prescribed fire would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, potentially help control non-native plant species, and potentially help restore native grasslands and coastal scrub, thereby improving habitat for wildlife species.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on fish and wildlife species in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**). This beneficial impact would be lesser than under Alternatives B and C because only one creek (San Vicente Creek) would be suitable under this alternative.

4.5 Biological Resources - Special Status Species

4.5.1 Introduction

This section discusses impacts on special status plant and animal species, along with applicable mitigation.

Methods of Analysis

The analysis of direct and indirect effects is focused on species, populations, and habitats within the planning area. Direct impacts are the direct or immediate effects of an action on biological resources. Examples of direct impacts to special status animals and their habitat include mortality, injury, or displacement; interference with movement or migration; disruption of essential behaviors such as feeding, breeding, and sheltering; and disturbance from noise, light, or dust. Examples of direct impacts to special status plants are primarily limited to mortality or injury. Examples of indirect effects to native habitat of special status animals and plants include erosion, sedimentation, introduction of pathogens, and introduction of non-native species that may compete with native species and cause habitat degradation.

The impact discussion presented for each alternative focuses on the particular impacts of that alternative and builds on the discussion of generalized impacts that would occur under all alternatives. Analysis of the effects of herbicide application on Special Status Species is provided under Water Resources and Quality, Wetland and Riparian Areas, Fish and Other Aquatic Organisms, and Wildlife Resources in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

Assumptions

Impacts to wildlife and habitat are discussed in the previous section. The effects of each alternative to special status species habitat would be generally similar, as would applicable mitigation. The assumptions used for biological effects analysis in general are incorporated by reference here. Additional assumptions used in this impact analysis include the following:

- Species-specific surveys and species avoidance and habitat protection measures would result in land use authorizations that minimize impacts on these special status species.
- For federally listed species, surface disturbance will be prohibited if the USFWS Endangered Species Act Section 7 consultation concludes that the proposed action is inconsistent with the recovery needs of the species as identified in an approved USFWS Recovery Plan.
- Other actions to conserve, restore, and enhance special status species habitat would also continue to be implemented. These proactive measures include direction to retain and acquire important native habitat, especially for federally listed species; to implement recovery plans and secure areas important for recovery (e.g., compensation lands); to maintain, enhance, and restore native habitat and native populations, including riparian and sensitive species; to maintain linkage between areas of natural habitat; to improve the knowledge base of the species and lands under BLM management; to conduct research focused on special status species; and to manage all public lands appropriately.

Project Design Features (PDF's)

The PDF's described in **Appendix D** include, but are not limited to the following:

- Minimize habitat disturbance and reduce the potential for take of federally listed species.
- Extend protective measures for federally listed species to candidate and proposed species.
- Conduct surveys for federally listed species and important habitat features for listed species.

4.5.2 Impacts Common to All Alternatives

Direct or indirect impacts to special status wildlife include take, mortality, injury, loss or degradation of occupied habitat, or disturbance that may affect normal behavior patterns such as breeding, feeding, sheltering, migration, or dispersal. Wildlife, including special status wildlife, could be exposed to hazards such as vehicle strikes, nest disturbance, entrapment, collision, electrocution, and hazardous materials.

Special Status Plant Species

There are no currently known populations of Federally listed or BLM sensitive plant species on C-CD. Although a few species have been recorded in nearby properties, there is low potential for them to occur on C-CD because of a lack of necessary soil or habitat type.

California Red-legged Frog

California red-legged frogs (CRLF) are vulnerable to anthropogenic disturbances beyond those described above. Introduction of nonnative predators and competitors such as nonnative fish and bullfrogs can potentially extirpate a breeding population. Introductions by recreational visitors has been implicated in the spread of nonnatives to other protected areas. Introduction of pathogens such as *Batrachochytridium dendrobatidis*, also known as the amphibian chytrid fungus or Bd, can also impact a breeding population and is a major concern of CRLF experts. New research suggests that even expansion of populations of native amphibians such as newts (California newt, *Taricha torosa* and Rough-skinned newt, *Taricha granulosa*) already present elsewhere on C-CD could have adverse effects on CRLF reproduction (Kiemnec et al (in prep)).

Red-legged frogs may be most negatively impacted if a trail traverses within 150 meters of their habitat as this is the median distance from which they move from breeding areas (Bulger et al. 2003; Fellers and Kleeman 2007). Red-legged frogs disperse and seasonally migrate across upland habitat and are subject to vehicle strikes when they cross roads or trails (Westphal unpubl. data). Buildings or other vertical structures, including cement curbs, may limit their movements. Red-legged frogs may move as far as two miles from breeding habitat and therefore have the potential to be negatively impacted by trails and roads that occur within 2 miles of breeding habitat (Bulger et al. 2003).

Central Coast Coho and Central California Coast Steelhead

Management actions identified in the alternatives are designed to promote protection and enhancement of habitat for salmonids, including measures to reduce sources of soil loss and erosion, instream habitat enhancement projects, and restoration of riparian areas. Partnerships with federal, state and many other partners will assist in development of sustainable trails that do not impact streams after the initial construction of the trails. Examples of the types of trail structures that could be developed as funding allows include bridge, boardwalks, railings, hardening of trail surfaces and drainage structures to funnel water away from the streams. All of these actions would have major, long-term, and beneficial effects on fisheries through improved habitat quantity and quality. Upslope sediment reduction would reduce the amount of fine sediment that deposits in pools and spawning habitat, which decreases suitability of salmonid habitat and may adversely affect survival of juvenile fish. Instream habitat enhancement would provide more rearing, holding, and spawning habitat.

Riparian area restoration would enhance the function of riparian areas to provide increased filtering capacity, increased nutrient input to streams, and increased stream cover and large wood recruitment potential. Restoration activities and prescribed treatments would be screened (as presented in Section 2.2 Overall Management Approach) to ensure that they benefit riparian dependent species, and methods would be constrained so that treatments do not retard or prevent attainment of fisheries goals and objectives. Increased access opportunities for researchers are key elements for the awareness, understanding, and appreciation of the values of the C-CD streams for listed fish species.

When management projects are implemented; PDF's and best management practices to reduce erosion and retain soil will reduce the potential effects on critical fish habitat. The BLM anticipates that improvements due to restoration of riparian vegetation, elimination of invasive vegetation, and selective thinning to reduce fire danger should improve the overall habitat for these listed species. Bridge building to cross streams, and boardwalks in wetland areas should reduce erosion. Hardening paths near streams and roads will reduce erosion as well as allow for a large number of visitors. Trail construction and/or road maintenance can be done to minimize stream bank soil and eliminate stream bed disturbance. Similarly, the development of range improvement projects (i.e. water pipelines, fencing, or corrals) for livestock grazing is expected result in lower sediment transport and beneficial impacts aquatic habitat and listed fish species.

The CZU Lightning Complex burned 86,509 acres, and is by far the largest wildfire in recent history in the Santa Cruz/San Mateo County region. Approximately 1,052 acres of C-CD burned in this fire in the Molino, Agua Puerca, and San Vicente watersheds (**Figure 14**). The potential for increased mobility of post-fire sediment is a concern for breeding salmonids and the California red-legged frog, which may be expected to see a reduction in successful reproduction in the short-term.

Table 4.5-1 displays the mileage of proposed trails within a range of buffer distance of steelhead critical habitat. Potential minor short-term disturbances that may be associated with the resource management actions are expected to be minimized by implementing PDF's identified in **Appendix D**.

Table 4.5-1. Length (miles) of Proposed Trail Development Within Proximity to Steelhead Designated Critical Habitat.

Buffer Distance	Alternative A	Alternative B	Alternative C	Alternative D
25 meters	1.23	0.10	0.32	0.21
50 meters	1.75	0.44	0.84	0.58
100 meters	1.78	1.63	2.48	2.28

Table 4.5-2. Area (acres) of Trail-Related Disturbance Within 200 m or 500 m of Steelhead Designated Critical Habitat.

200 meters	449 (7.7%)	1,603 (27.6%)	2,364 (40.8%)	1,993 (34.1%)
500 meters	1,097 (18.9%)	2,484 (42.8%)	3,496 (60.3%)	3,016 (51.6%)

The impacts of construction and development of recreation facilities would be screened through the Section 7 consultation process to ensure that they are consistent with attainment of goals and objectives for special status species. The PDF's identified in **Appendix D** would also be required to implement the decisions in this RMPA. Erosion and sediment control measures would be implemented during construction to reduce the potential for sediment and chemical-laden runoff to adversely impact sensitive species habitat. Care will be taken to minimize effects on riparian areas as these are filters for upslope sediment and protect streams.

4.5.3 Impacts of Alternative A (No Action)

Recreation

Day use hiking on the Molino Pasture Trail and the Liddell Creek Trail has the potential to affect habitat for listed species. For example, Alternative A would increase the length of trails and visitor use in the floodplains of Liddell Creek compared to Alternative B, C and D (**Table 4.5-1**).

Introductions and spread of non-native plant, aquatic wildlife species, and/or pathogens are anticipated to impact native aquatic species adversely, including these special status fish species. For example, the New Zealand mud snail (*Potamopyrgus antipodarum*) has been documented in Liddell creek. This species is a growing concern among fish biologists in this region. Recreational activities or other development activities that may occur at proposed stream crossings have potential to facilitate the spread of the New Zealand mud snail and other aquatic invasive species within the six watersheds at C-CD. (NOAA Fisheries Southwest Fisheries Science Center 2019, Western Regional Panel of the Aquatic Nuisance Species Task Force (USFWS 2012), and California Department of Fish and Wildlife (2012).

Under this alternative, two existing trails within the Liddell creek riparian corridor and near Molino Creek would be utilized for recreational hiking. At both locations small parking areas would be constructed. The total area created in the establishment of parking areas under Alternative A are approximately 0.25 acres each. The proximity of the parking area could increase the potential that both trail construction and recreationists would cause bank erosion and increased sedimentation into Molino creek. The Liddell creek trail runs parallel to Liddell creek. Although the trail would be buffered from the edge of the creek, there is high potential that recreationists would be able to access the creek through social trails. This could lead to bank erosion and increased sedimentation which could degrade spawning and rearing habitat for steelhead which have been documented in both Liddell creek and in Molino creek. Coho, which have been reported in Liddell Creek, could be adversely impacted as well.

Under this alternative, the Molino creek parking area would occur within the Molino creek riparian area. In order to access the Molino Pasture Trail, the BLM would work with partners to utilize existing infrastructure or construct a new stream crossing to discourage visitors from entering Molino Creek. The parking area adjacent to Molino Creek off Swanton Road, and the parking area off Bonny Doon Rd. adjacent to Liddell Creek, would be designed to avoid substantially altering the existing drainage patterns in the selected area. For example, the proposed parking areas would include storm water drainage systems. All storm water drainage as a result of the project would be managed on site and would not exceed the capacity of any storm water drainage system.

The BLM anticipates that consultation with USFWS and NMFS, as well as PDF's identified in **Appendix D**, will result in minor adverse short-term and long-term impacts of recreation management actions on special status species habitats in the Molino Creek watershed and in the Liddell Creek watershed.

Transportation and Travel Management

Under Alternative A, the BLM would maintain approximately 28 miles [34 acres] of existing network of roads that are considered administrative routes that are necessary for management and other valid uses. The BLM's PDFs for transportation management activities are summarized in **Appendix D**. The effects of travel management would be mitigated by observing seasonal restrictions on unimproved roads and implementing projects prior to winter weather (November and December) to minimize and avoid impacts to listed species habitats.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Under this alternative, existing programs would be continued to control non-native plant species. However, the potential benefits to native riparian plant species associated with Alternative A are less than other action alternatives because current management is limited to manual methods of vegetation management that generally cause more ground disturbance and potential sedimentation to streams. Future implementation projects would be screened and modified to ensure that they are consistent with attainment of special status species goals and objectives.

The impact of grazing on ponds and streams in the existing allotments would continue. Under current management, changes to the grazing practices would be limited due to the lack of management direction provided in the CCONM RMP (BLM 2005a) and the IMP (BLM 2014). As a result, there would be limited opportunity to implement range improvement projects that are designed to discourage and/or exclude

livestock from entering riparian areas and wetlands. As a result, the BLM expects that habitat for listed species would be less protected under Alternative A than Alternatives B, C or D.

The maintenance, creation, or retirement of artificial ponds for the purposes of grazing is a major effect on populations of pond breeding amphibians and would be expected to continue under this alternative.

The exclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, adverse impacts on individual special status species habitat. Non-native plant species may continue to spread and the spread of these weeds would continue to displace (outcompete) native plant species and degrade habitat. No potential direct, adverse effects of herbicide chemicals on individual special status species would occur based on the standard operating procedures identified in the BLM's proposed WMP (**Appendix F**). The continued exclusion of fire from the wildfire adapted vegetation types would result in continued fuel load accumulation and suppressed regeneration and recruitment, likely resulting in a trend towards slow, long-term habitat degradation.

Alternative A would continue the BLM's existing agreement with California Department of Forestry and Fire Protection (CALFIRE) for fire suppression in the C-CD. The North Coast of Santa Cruz County is a direct protect area (CDPA) for CALFIRE, so the BLM has developed a Modified Suppression Plan in coordination with CALFIRE to minimize impacts to listed species habitats from fire suppression strategies and practices. Fire suppression activities can result in adverse impacts to aquatic habitats for frogs and fish through construction of dozer lines and new road construction, retardant drops and water withdrawals. However, fire suppression may benefit fisheries because current forest fuel loads are higher now than during the last 150 years or more. When wildland fires now occur in watersheds, the fires are dramatically different from those that occurred in the past. Many present-day wildfires tend to become stand replacement fires in areas that 100 years ago would only carry small low-intensity ground fires. Fish populations that have evolved in these areas may not be able to survive the intense wildfires that can occur in these areas today. Thus, protection of aquatic habitat from the impacts of stand replacing wildfire may outweigh the short-term impacts of suppression activities.

Special Management Areas

No designation of Special Management Areas would have no effect on special status species.

4.5.4 Impacts of Alternative B

Recreation

The development and use of 20 miles of trails for hiking, mountain biking, and horseback riding may affect habitat for listed species due to initial construction and occasional maintenance needs. Closure of trails under wet weather conditions will minimize adverse impacts from trails on habitat for special status species. Development of parking facilities may adversely impact listed species over the long term if no bridges are built to keep visitors out of the streams and to direct them onto the trails. Construction of parking facilities would have negligible effects where PDF's are used to minimize and avoid take of listed species and their associated habitats.

Alternative B would result in higher use numbers in RMZs 1 and 3 compared to Alternative A, but less visitor use numbers than Alternatives C and D (**Appendix G**). Under Alternative B, the Agua Puerca trail would cross Molino creek and Agua Puerca creek, the Cotoni trail would cross Yellow Bank creek at two locations and would parallel the creek for approximately 1 mile. The crossings at Molino and Agua Puerca Creeks are above existing fish barriers that limit upstream migration of steelhead. Yellow Bank Creek is not designated steelhead critical habitat. Under Alternative B, recreational development would be precluded within a significant portion of C-CD (RMZs 2 and 4 = 3,261 acres, 56%). This would preclude development within proximity to streams with documented occurrences of coho (San Vicente, Laguna, and Liddell Creeks). It also would preclude adverse impacts to steelhead or steelhead critical habitat within those creeks.

Under Alternative B trails come within 50 meters of red-legged frog breeding habitat in 6 locations and within 25 meters of habitat in 5. If recreational trails are near ponds or streams, it can be expected that dogs will enter the water. Dogs that enter the water may disrupt egg masses or frogs. Additionally, users entering multiple bodies of water may spread invasive species such as New Zealand Mud snail. Recreationists may also introduce unwanted pets such as crayfish, aquarium fish, bullfrogs, or turtles. The introduction of any of these species would be expected to have negative impacts on frogs.

To reduce these potential effects, dogs would be required to be on leashes. Additionally, visitors to C-CD would be required to stay on the trail system. Where large numbers of visitors are anticipated, the BLM would design trails to keep visitors away from the ponds using natural barriers or fencing and signage. In this way the potential adverse impacts of trail use would be managed consistent with special status species goals and objectives. Therefore, the BLM anticipates that with the help from partners, that the recreation management actions would have minimal effects on the habitat and negligible effect on individuals of special status species.

Transportation and Travel Management

Under Alternative B, the BLM would maintain approximately 28 miles [34 acres] of existing network of roads that are considered administrative routes that are necessary for management and other valid uses. The PDF's for transportation management activities are summarized in **Appendix D**. The effects of travel management would be mitigated by observing seasonal restrictions on unimproved roads, and implementing projects prior to winter weather to minimize and avoid impacts to listed species habitats.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, beneficial effects on special status species habitat. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types (habitat), such as thistles in grasslands and cape ivy in riparian areas and wetlands. The use of appropriate herbicide formulations, establishing buffer zones from special status species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to special status species. Prescribed fire would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, control non-native plant species, and to restore native grasslands and coastal scrub, thereby improving habitat for special status species. Herbicide use and prescribed fire on Federally-listed species would be further analyzed and mitigated through Section 7 consultation.

The maintenance, creation, or retirement of artificial ponds for the purposes of grazing is a major effect on populations of pond breeding amphibians and would be expected to continue under this alternative.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on fish and wildlife species in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**). All three of the creeks identified as suitable segments under this alternative are considered habitat for California red-legged frog, coho and steelhead.

4.5.5 Impacts of Alternative C

Recreation

Similarly to Alternative B, under Alternative C, the Agua Puerca trail would cross Molino creek and Agua Puerca creek and the Cotoni trail would cross Yellow Bank creek at two locations and roughly parallel the creek for approximately 1 mile. In addition, under Alternative C, the BLM would establish additional trails that would cross Liddell creek and add an additional crossing of Agua Puerca creek.

Alternative C would result in higher visitation numbers in RMZs 1 and 3, compared to Alternatives A and B (**Appendix G**). Despite increased visitation, the BLM anticipates that recreation management actions would have negligible adverse impacts on special status species habitats due to application of measures included in **Appendix D**. The crossings at Molino and Agua Puerca Creeks are above existing fish barriers that limit upstream migration of steelhead. Yellow Bank Creek is not considered steelhead critical habitat. Under Alternative C, recreational development would be precluded within a smaller portion of C-CD (RMZs 2 and 4 = 2,249 acres, 38%) than Alternative B or D. This would preclude development within proximity to Laguna Creek.

Under Alternative C, trails are within 50 meters of red-legged frog breeding habitat in 8 locations and within 25 meters in 7 locations. If recreational trails are near ponds or streams, it can be expected that dogs will enter the water. Dogs that enter the water may disrupt egg masses, cause flight reactions in adult frogs and tadpoles, or bite or eat frogs. Horses may also be ridden or led to water bodies where they may startle adult frogs and trample egg masses. Horses may also increase the risk of the establishment of social trails, which would increase visitation by humans and dogs. Users entering multiple bodies of water may spread invasive species such as New Zealand Mud snail and pathogens such as *Batrachochytrium dendrobatidis*. Recreationists have introduced unwanted pests such as nonnative fish, crayfish, or turtles into publicly accessible streams and ponds within protected areas in California's Bay Area. The introduction of any of these species would be expected to have negative impacts on frogs and other native aquatic species. Therefore, BLM will seek to educate members of the public on this topic whenever possible. Appropriate signage may aid in reducing the potential for this to happen at C-CD.

Transportation and Travel Management

Under Alternative C, the BLM would maintain approximately 28 miles [34 acres] of existing network of roads that are considered administrative routes that are necessary for management and other valid uses. The BLM's standards and BMP's for transportation management activities are summarized in **Appendix D**. The effects of travel management would be mitigated by observing seasonal restrictions on unimproved roads, and implementing projects prior to winter weather (November and December) to minimize and avoid impacts to listed species habitats.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, beneficial effects on special status species habitat. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types (habitat), such as thistles in grasslands and cape ivy in riparian areas and wetlands. The use of appropriate herbicide formulations, establishing buffer zones from special status species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to special status species.

Prescribed fire would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, control non-native plant species, and to restore native grasslands and coastal scrub, thereby improving habitat for special status species. Herbicide use and prescribed fire on Federally-listed species would be further analyzed and mitigated through Section 7 consultation.

The maintenance, creation, or retirement of artificial ponds for the purposes of grazing is a major effect on populations of pond breeding amphibians and would be expected to continue under this alternative.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on fish and wildlife species in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**). Both creeks identified as suitable segments under this Alternative (Liddell and Laguna Creeks) are considered habitat for California red-legged frog, coho and steelhead.

4.5.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Under Alternative D, the proposed trails in RMZ 1 would cross Molino Creek and Agua Puerca Creek. There is an existing crossing over Molino Creek that consists of an earthen dam from a former ranch road built over a culvert. A new pedestrian bridge at the stream crossing over Agua Puerca Creek would avoid adverse impacts to the aquatic habitat from trail use.

In RMZ 3, the Cotoni trail would cross Yellow Bank Creek at one location in the upper watershed. A new pedestrian bridge at the stream crossing over Upper Yellow Bank Creek would avoid adverse impacts to the aquatic habitat from trail use.

Alternative D would result in similar annual visitor use estimates as Alternative C (see **Appendix G**). With the application of measures included in **Appendix D**, the BLM anticipates that recreation management actions would minimize or avoid adverse impacts on special status species habitats. Recreational development would be precluded within a significant portion of C-CD (RMZs 2 and 4 = 3,187 acres, 55%). This would preclude development within proximity to streams with documented occurrences of coho salmon (San Vicente, Laguna, and Liddell Creeks). It also would preclude adverse impacts to steelhead or steelhead critical habitat within those creeks.

Under Alternative D, trails within red-legged frog breeding habitat are the same as Alternative C. If recreational trails are near ponds or streams, it can be expected that dogs will enter the water. Dogs that enter the water may disrupt egg masses, cause flight reactions in adult frogs and tadpoles, or bite or eat frogs. Horses may also be ridden or led to water bodies where they may contribute to erosion, startle adult frogs, or trample egg masses. Horses may also increase the risk of the establishment of social trails, which would increase visitation by humans and dogs. Users entering multiple bodies of water may spread invasive species such as New Zealand Mud snail and pathogens such as amphibian chytrid fungus (*Batrachochytrium dendrobatidis*). Recreationists have introduced unwanted pests such as nonnative fish, crayfish, or turtles into publicly accessible streams and ponds within other protected areas in California's Bay Area. If the introduction of any of these species occurs, it would be expected to have negative impacts on frogs and other native aquatic species. Therefore, BLM will seek to educate members of the public on this topic whenever possible. Appropriate signage may aid in reducing the potential for this to happen at C-CD.

Under all Alternatives discussed in this plan, BLM plans to introduce dog-walking as an onsite use. Given the recognition of the likely direct and indirect impacts of dogs on wildlife, BLM will not include dog-

walking on all trails throughout the site. Under Alternative D, all trails and other areas such as parking lots and their surroundings will have “on-leash” at all times requirements. BLM will prepare onsite signage and subsequent maps to clarify to recreationists the areas where dogs are and are not allowed onsite. Dogs will not be allowed to enter any streams or ponds onsite. Dogs will not be allowed within the Molino Creek drainage, or to the west of the planned pedestrian/bike bridge over Molino Creek. This measure will aid in protecting the ecological integrity of the area to the west of Molino Creek, which is known to host listed (red-legged frog, steelhead), and rare species (badger and raptors). The trail which BLM created through oak and redwood grove, and scrub will not be open to dogs, given the high number of woodrat nests surrounding the trail, as well as the use of these area by wildlife species such as pumas.

Transportation and Travel Management

Under Alternative D, the BLM would maintain approximately 28 miles [34 acres] of existing network of roads that are considered administrative routes that are necessary for management and other valid uses. The PDF’s for transportation management activities are summarized in **Appendix D**. The effects of travel management would be mitigated by observing seasonal restrictions on unimproved roads and implementing projects prior to winter weather to minimize and avoid impacts to listed species habitats.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, major, beneficial effects on special status species habitat. While livestock grazing will be the primary large-scale vegetation management method used, the inclusion of herbicide use and prescribed fire would provide additional, effective vegetation management methods. Herbicide use would provide a more targeted method to control specific weeds in specific vegetation types (habitat), such as thistles in grasslands and cape ivy in riparian areas and wetlands. The use of appropriate herbicide formulations, establishing buffer zones from special status species and their habitats, and following herbicide label instructions and standard operating procedures during application will minimize any potential adverse impacts to special status species (**Appendix F**). Rodeo has been shown to affect larval stages of frogs and to interfere with the protective microbial film on the skin of frogs (Krynak and Benard 2017). This has the potential to expose frogs to many diseases including chytrid (McCoy and Peralta 2018). Freshwater zooplankton (found in wetlands and ponds) show toxicity dependent on the levels of application (Huarica et al. 2020). Prescribed fire would provide a broad vegetation management tool, in addition to livestock grazing, in order to reduce fuel loads, control non-native plant species, and to restore native grasslands and coastal scrub, thereby improving habitat for special status species. Herbicide use and prescribed fire on Federally-listed species would be further analyzed and mitigated through Section 7 consultation.

The maintenance or creation of artificial ponds for the purposes of grazing would have major beneficial effects on populations of pond breeding amphibians under this alternative.

Special Management Areas

Designation of Special Management Areas would have direct beneficial effects on fish and wildlife species in stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**). The creek identified as a suitable segment under this Alternative (San Vicente Creek) is considered habitat for California red-legged frog, coho salmon, and steelhead.

4.6 Cultural and Heritage Resources

4.6.1 Introduction

The goals for cultural resource management in the CCNM are identified in the CCNM RMP (BLM 2005a). Cultural resources include prehistoric and historic archaeological sites, artifacts and rock art, sacred sites and other culturally sensitive locations, buildings and structures, landscaping, historic trails and districts, and rural landscapes. Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to “take into account the effects of Federal actions on historic properties”.

The BLM National Programmatic Agreement (PA) between the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (SHPO) provides alternative procedures for implementing 36 CFR 800. The California Statewide Protocol Agreement with California and Nevada SHPOs implements the National PA.

The BLM’s protection objectives for cultural resources management program focuses on protecting the significance of cultural resources by ensuring they are managed in a manner suited to the characteristics, attributes, and uses that contribute to their public importance; giving adequate consideration to the effects of land use decisions on cultural properties; towards meeting legal and regulatory obligations through a system of compliance fitted to BLM’s management systems; and toward ensuring cultural resources on public land are safeguarded from improper use and responsibly maintained in public interest.

Not all cultural resources are significant and qualified for consideration under the NHPA and other regulations. Significant resources are designated as “historic properties” and are defined in 36 CFR 800.16(1) as “any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).”

The BLM is unable to quantify impacts on cultural and heritage resources from the range of alternatives because the exact timing and/or location of future management activities is not available or attainable. Therefore, the evaluation of such impacts is described qualitatively based on current resource conditions. The RMPA is a planning document, and indirect and cumulative effects of leasing and development inform the planning decision. A qualitative analysis for these impacts, as opposed to a quantitative analysis is appropriate because it provides a reasonable forecast of effects, but does not speculate on the direct effects on cultural and heritage resources from the range of alternatives presented in the RMPA.

A comprehensive survey of the planning area has been conducted for cultural resources at BLM Cultural Resources Inventory (Class I, Class II, and Class III). In areas with moderate to high sensitivity for cultural resources the intensive (Class III) and reconnaissance (Class II) was conducted to reliably analyze impacts to cultural resources under the range of alternatives. Analysis of the effects of herbicide application on Cultural Resources is provided in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

Assumptions

Cultural resources can potentially occur anywhere at C-CD, which has not been completely inventoried. Some yet to be identified cultural resources may be determined significant and qualify for consideration under the NHPA and/or have religious and cultural significance to tribes. Significant resources identified pursuant to the NHPA are designated as “historic properties” and are defined in 36 CFR 800.16(1) as “any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).” Archaeological components of historic properties on Federal lands are identified through survey, research, and often test excavations to determine their NRHP eligibility. Culturally sensitive locations may be identified through consultation with tribes and outreach to other Native American individuals and groups. Not all sites or places of cultural value may qualify as

historic properties under the NHPA, but may be considered part of the environment for purposes of NEPA review and addressed under such authorities as AIRFA and Executive Order 13007, Sacred Sites.

Given the above considerations, the analysis of historic properties is based on the following assumptions:

- Archaeological sites are highly sensitive to impacts, which are irreversible, and result in irretrievable loss.
- Archaeological resources derive their data value from the context of the artifacts and physical features contained within the site. Therefore, disturbance of the arrangement of the site contents effectively destroys the information it contains.
- Unless determined otherwise, all cultural resources including archeological sites are treated as historic properties and afforded the associated emphasis on preservation through avoidance of any potential adverse effect.
- Information about archaeological resources and historic properties including historic properties that are traditional cultural properties must be held confidential (NHPA, Section 304 [a], Archaeological Resource Protection Act [ARPA], Section 9[a]).
- Certain management activities proposed under the alternatives have the potential to cause irreversible disturbance and damage to non-renewable historic properties. The BLM will avoid, minimize, or mitigate effects to these resources from authorized uses through project avoidance, redesign, and, if necessary, mitigation (such as data recovery investigations), in accordance with the Protocol Agreement with the California and Nevada State Historic Preservation Offices (Revised 2019) or the Section 106 regulations. The Project Design Features (PDFs), listed below, such as fencing, protective barriers, or site capping will be implemented to avoid and minimize adverse effects to historic properties.
- The BLM will not approve activities that may adversely affect any historic properties (including those properties requiring consideration under the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007, or other cultural resource related statutes, regulations, and executive orders) until it completes its obligations under Section 106 NHPA, NEPA, and other authorities. The BLM may require modification to proposals to protect such properties or disapprove any activity that is likely to result in adverse effects that cannot be avoided, minimized, or mitigated.
- The BLM will continue to implement government-to-government consultation with federally and non-federally recognized tribes on a case-by-case basis for site-specific proposals which would help determine other issues of concern, including but not limited to access rights, disruptions of cultural practices, impacts on visual resources important to the tribes, and impacts on subsistence resources.

Project Design Features

The PDF's relevant to the treatment of cultural resources in **Appendix D** include:

- No construction or surface-disturbing activities shall occur without prior written authorization of the authorized BLM officer based, in part, on completion of compliance with Section 106 of the NHPA and other related authorities.
- Identification, safe avoidance, or mitigation of potential adverse effect on historic properties shall be required on public land as a condition of a lease or permit.
- Where avoidance or adequate protection is not feasible and the property is significant for the scientific data it may contain, initiate a data retrieval (excavation) of sites. Additional analysis and consultation under NEPA and NHPA would be required before data retrieval could occur.

- Surface disturbance will be minimized and proposed developments will utilize previously disturbed areas (with no identified NRHP-eligible cultural resources) when feasible.
- Resource protection may include installation of fencing, protective barriers, or site capping to minimize surface disturbance or impacts on culturally sensitive resources; the potential of certain protective measures (e.g., fencing) that may draw unwanted attention to sites or inadvertently restrict access to traditional use areas shall be considered.
- BLM will continue open dialogue and share information through consultation with federally recognized tribes and with other Native Americans and ethnic groups that have cultural ties to lands proposed for development.
- The presence or absence of cultural properties will be determined prior to the approval of any surface-disturbing activity through such means as cultural resource field inventories, archival research, oral history, or other data gathering means deemed appropriated and evaluations of identified resources shall be evaluated and appropriate treatment measures identified for all project areas subject to surface disturbance or visual intrusions.
- When cultural properties are present, the project would be redesigned or modified to the extent feasible to safely avoid impacting cultural sites or steps taken to adequately mitigate impacts through project redesign or data recovery.
- During periods of high rainfall and runoff or when soils are wet and muddy, soil-disturbing activities shall be avoided to minimize impacts to nearby culturally sensitive resources vulnerable to soil erosion.

Additional archaeological or cultural surveys and further consultation with tribes will be required in the event a proposed project or its location is changed or modified after the consultation, initial survey is completed; the inventory, associated documentation, and necessary compliance would be completed prior to project approval.

4.6.2 Impacts Common to All Alternatives

Many of the ground disturbing actions identified in the range of alternatives could affect prehistoric and historic-era cultural resources or access to culturally sensitive areas. In regard to Section 106, many of the actions could also result in adverse effect determinations for purposes of compliance with Section 106 of the NHPA.

According to 36 CFR 800.5(a)(1), “an undertaking has an effect on a historic property when the undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register...” An effect is considered adverse when the effect on a National Register-eligible property may diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association. These effects are commonly caused by direct impacts of soil-disturbing activities or indirect impacts through visual or auditory intrusions. Adverse effects include the physical destruction of all or part of the property.

Adverse effects on historic properties resulting from management actions include, but are not limited to:

- Physical destruction or damage to all or part of the property;
- Alteration of the property that is not consistent with the Secretary’s Standards for the Treatment of Historic Properties (36 CFR part 68);
- Removal of the property from its historic location;
- Isolation of the property from or alteration of the property’s setting when that character contributes to the property’s qualifications for listing in the National Register;
- Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;

- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe; or
- Unauthorized collection of artifacts.

If ground disturbance from development is proposed for areas with NRHP-eligible cultural resources, these potential adverse effects would be avoided or greatly minimized through project redesign. The most likely sites to be encountered during management activities are prehistoric archaeological sites. For this area, the most common site types include residential occupation sites, often found in proximity of water sources such as coastal streams and small special use sites found in upland settings. The larger residential sites may also include human burials. Native American traditional use locations and built-environment sites are much less likely to be encountered. Avoidance of recorded, eligible cultural resources, or areas that are known to be important due to their traditional cultural use, is considered to be the most effective protection measure for these resources.

When avoidance of adverse effects on historic properties is not feasible or when they inadvertently occur in spite of site protection through the Project Design Features and other preservation management practices, procedures identified in the Protocol Agreement and the 36 CFR 800 shall be employed as necessary to resolve adverse effects.

4.6.3 Impacts of Alternative A (No Action)

Compliance with Section 106 of the NHPA is intended to promote the protection and preservation of those cultural sites determined to be historic properties so that authorized use of public lands would not result in adverse impacts to NRHP-eligible archaeological sites, traditional cultural properties, sacred sites, or built-environment resources. However, when avoidance of adverse impacts is not feasible due to overriding project or land use considerations, PDF's may be implemented as outlined above in Section 4.6.1. Such an analysis recognizes the importance of consultation with Native American tribes and other concerned parties on specific undertakings involving various authorized land uses. Authorized uses with highest potential to directly affect historic properties and other culturally sensitive areas include construction of new parking and transportation facilities, vegetation management actions, livestock grazing, and recreational trail use. These impacts under this Alternative are minor and limited.

Recreation

Recreation under Alternative A utilizes already established trails and routes for recreation opportunities. With less new ground disturbance there are fewer opportunities to negatively impact cultural resources. Access and use of cultural resources is minor and localized. BLM cultural resources Class III investigations were conducted of established trails under this alternative prior to utilization of routes. No cultural resources were identified within the existing trail network. So, it would be unlikely to have direct impacts to cultural resources.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Grazing can have both beneficial and adverse effects for cultural resources. Routine grazing can reduce excess vegetation and provide better access to cultural resources for research needs. Installation of fences to exclude cattle from cultural resources would have long-term, moderate, localized, beneficial effects on cultural resources by preventing impacts related to trampling and congregating of cattle, and trailing. (Douglass: 2012). If it is determined that measures such as fencing would be needed, further review would be done at that time.

Under the No Action Alternative, proposed vegetation treatments would be limited to livestock grazing and mechanical fuel reduction. The lack of herbicide application and prescribed fire would likely result in continued expansion of weed populations. Potential indirect effects of weed spread on cultural resources includes competition with native plant species used for traditional uses. Adverse effects of undesirable

weeds (thistles, etc.) on access to cultural sites for research or traditional practices would be long-term minor to cultural resources.

Special Management Area

No designation of Special Management Areas would have no effects on cultural values.

4.6.4 Impacts of Alternative B

Recreation

Under Alternative B, the area of potential effect for the proposed parking lots near Warrenella Road includes the Mocettini Cheese House. However, the proposed parking area under this alternative is located outside this historic site. The proposed location of the parking would maintain the integrity of the historic era landscape that is integral to the historic site's setting. Placing parking and visitor access at this site will increase the site's visibility, which could have a long-term positive impact on the site through interpretation and increased public appreciation of Swiss dairy history in Santa Cruz County and Davenport. Permanent minor to moderate negative effects such as vandalism and looting on the site may occur through increased visibility and access to the structure which can be minimized through administrative efforts such as law enforcement patrols and cultural resource monitoring.

The creation of additional trails in RMZ 1 and RMZ 3 increases access to areas that contain cultural resources as compared to Alternative A. Trails identified in Alternative B would be designed to avoid sensitive cultural resources and minimize impacts to cultural resources. Trail creation under this alternative should have minor impacts to cultural resources through cultural resource avoidance and physical protection measures. A cultural resources Class III inventory was conducted of the proposed trail alignments under Alternative B. A total of 10 cultural resources were identified during the course of the Class III investigation of the trail alignment. The BLM had not fully evaluated the resources found during the inventory. The BLM is treating the resources as NRHP eligible under Criterion D for its scientific research potential. The proposed trail alignment was rerouted to avoid direct effects to the resource. To reduce potential impacts to cultural resources, segments of the originally proposed trail alignments have been adjusted to avoid negative impacts to cultural resources. Indirect effects (related to increased future access) are not anticipated generally for the Phase 1 trail system. Therefore, construction and the use of the Phase 1 trail system would not impact cultural resources. Recreation is primarily limited to established trails and social trails are discouraged, again minimizing long term impacts from public access.

Under Alternative B dispersed camping opportunities are offered through the BLM's special recreation permit (SRP) system. Since this Alternative does not have established camping areas, this has the potential to have a minor adverse impact on cultural resources. Not every area that could be utilized for camping may have a complete BLM Class III Inventory prior to usage, so unknown resources could be impacted negatively, but could also have a beneficial impact if visitors report resources for further research and foster an appreciation for cultural resources and heritage.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Grazing would increase in this Alternative, potentially increasing the locations where grazing impacts reach as compared to Alternative A. Grazing can provide moderate positive impacts to cultural resources through vegetation clearance to increase native and traditional use plants. It can also increase access to areas for scientific research and traditional uses. Like Alternative A, fencing and administrative measures, such as exclusion of sensitive areas, will be used to protect cultural resources from negative impacts.

Prescribed fire could occur within identified cultural sites at C-CD. Proposals for prescribed fire would be developed in coordination with partners, including the Amah Mutsun Land Trust, to ensure cultural resource protection at the sites. Prescribed fire can have lasting positive effects for cultural resources by

promoting traditional uses and increase native vegetation while having no adverse effects. Herbicide application would not occur within the identified core cultural sites area, unless it is determined in coordination with partners that herbicide application would be no potential for adverse effects on cultural sites or Native American use sites.

Special Management Area

Designation of Special Management Areas would have long-lasting direct beneficial effects on cultural values associated with stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**). The designation would increase protection to pre-contact sites and traditional use plants as identified by the Amah Mutsun through establishing authorized access and use in the designated areas.

4.6.5 Impacts of Alternative C

Recreation

Recreation under Alternative C would see an increase in access across C-CD. With the forecasted visitation at C-CD and substantially increased access to the property, the likelihood of moderate permanent negative impacts to cultural resources is high. Sites such as pre-contact food preparation and vegetation collection sites as well as historic era habitation sites are sensitive to modification of site formation, unauthorized artifact collection, and feature modification through vandalism and unauthorized use (McBrearty: 2019). Like Alternative B, prior to approving the Final RMPA, a cultural resources Class III investigation has been conducted in the Area of Potential Effect from the construction associated with RMPA implementation decisions to minimize or avoid negative impacts to Historic Properties. Increased visitation could provide a significant long-term positive impact for cultural resources through fostering stewardship through heritage education opportunities.

Unlike Alternative A and B, pedestrian access is not limited to designated trails. Avoidance of sensitive cultural resources through trail planning can encourage people to avoid sensitive or un-inventoried areas but off-trail hiking would not be prohibited. Therefore, adverse impacts to cultural resources under Alternative C are greater than Alternatives A and B.

Camping opportunities under Alternative C consist of designated hike-in or ride-in primitive camping sites. This would limit the dispersion of potential effects on cultural resources by establishing specific areas that camping would be allowed. There is no SRP system to limit visitors to the camping sites, which could allow for overflow of visitors into uninventoried areas of the property, especially around the established camp sites. Unauthorized camping could have a minor adverse impact on cultural resources from the unauthorized overflow. This option does have a positive impact on cultural resources by having the most opportunities to the public for overnight visitation and enjoyment of the cultural landscape.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Grazing would increase in this Alternative, potentially increasing the locations of where grazing impacts reach (see Alternative A). The PDF's and potentially resulting effects identified for Alternative A would remain the same for Alternative C. The types of impacts to cultural resources would be the same as described for Alternative B. The PDF's identified as common to all alternatives would reduce the potential impacts of livestock grazing, herbicide use, and prescribed fire.

Special Management Area

Designation of Special Management Areas would have direct long-lasting beneficial effects on cultural values associated with stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**). The designation would increase protection to pre-contact sites

and traditional use plants as identified by the Amah Mutsun through establishing authorized access and use in the designated areas.

4.6.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Recreation under Alternative D would see an increase in access across the western and eastern portion of the C-CD unit as compared to Alternatives A and B. With the forecasted visitation at C-CD and substantially increased access to the property, the likelihood of moderate permanent negative impacts to cultural resources is moderate. The central portion of the C-CD unit focuses on resource protection and promotion, thus lessening the impact to cultural and natural resources. Sites such as pre-contact food preparation and vegetation collection sites as well as historic era habitation sites are sensitive to modification of site formation, unauthorized artifact collection, and feature modification through vandalism and unauthorized use (McBrearty: 2019). A BLM cultural resources Class III investigation has been conducted in the Area of Potential Effect for the proposed construction associated with RMPA Phase I implementation decisions to minimize or avoid negative impacts to Historic Properties. Prior to implementing the proposed Phase II decisions, a cultural resources Class III investigation will be completed to minimize or avoid negative impacts to Historic Properties. In many cases, trail construction methods utilize the sides of hills where the slope is steep and there is less probability of encountering cultural resources. Trail construction methods employed would also reduce erosion from water, which benefits cultural resources by reducing soil movement and modification of site formation.

Similar to Alternative B, hiking is limited to designated trails only, thus reducing the likelihood of visitors entering sensitive or uninventoried areas. Camping opportunities under Alternative D focuses on providing opportunities to camp using a special permit system. Unlike the camping through permitting under Alternative B, Alternative D focuses on providing opportunities to organizations and groups that focus on cultural and natural resource research, education, and furthering traditional cultural practices. This Alternative has positive impacts to cultural resources through the focus on these key elements, the ability to reduce potential impacts to known cultural resources by focusing camping opportunities outside known cultural sites, and fostering an appreciation for cultural resources and heritage.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have long-term, beneficial effects on cultural resources. When managed appropriately, livestock grazing, herbicide use, and prescribed fire would provide long lasting positive effective vegetation management to reduce non-native plants and restore native habitat which is important to traditional use. The vegetation management program proposed under Alternative D would reduce the severity and intensity of wildfire within the C-CD unit. Such wildfire can cause damage to sensitive cultural resources such as historic-era built environment and archaeological sites.

Special Management Areas

Designation of Special Management Areas would have long-lasting direct beneficial effects on cultural values associated with stream segments determined to meet criteria for eligibility and suitability for Wild and Scenic River System (**Appendix E**).

4.7 Water Resources

4.7.1 Introduction

The County of Santa Cruz is experiencing a lack of sustainable water supply due to groundwater overdraft and diminished availability of streamflow. Because of this, coordinated water resource management has been of primary concern to the County and to the various water agencies. As required by state law, each of the County's water agencies serving more than 3,000 connections must update their Urban Water Management Plans (UWMPs) every five years, with the most recent updates completed in 2016.

Therefore, County staff are working with the water agencies on various integrated regional water management programs to provide for sustainable water supply and protection of the environment. Effective water conservation programs have reduced overall water demand in the past 15 years, despite continuing growth. In August 2014, the Board of Supervisors and other agencies adopted the Santa Cruz Integrated Regional Water Management (IRWM) Plan Update 2014, which identifies various strategies and projects to address the current water resource challenges of the region. Other efforts underway or under consideration are stormwater management, groundwater recharge enhancement, increased wastewater reuse, and transfer of water among agencies to provide for more efficient and reliable use.

The County is also working closely with water agencies to implement the Sustainable Groundwater Management Act of 2014. By January 2020, Groundwater Sustainability Plans will be developed for two basins in Santa Cruz County that are designated as critically overdrafted—Santa Cruz MidCounty and Corralitos - Pajaro Valley. These plans will require management actions by all users of each basin to reduce pumping, develop supplemental supplies, and take management actions to achieve groundwater sustainability by 2040. A management plan for the Santa Margarita Basin will be completed by 2022, with sustainability to be achieved by 2042.

Analysis of the effects of herbicide application on Water Resources and Quality is provided in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

Assumptions

The conceptual trail alignments would include crossings of ephemeral drainages and intermittent to perennial streams that may be considered jurisdictional by the USACE, RWQCB, and CDFW. The C-CD Access Plan would include trail design guidelines for new trails and for trails to be developed from existing roads located within C-CD property.

Potential siltation from the project would be addressed through implementation of PDF's [i.e. erosion control requirements]. No water quality standards or waste discharge requirements would be violated during construction or operation of the proposed trail systems.

The total impervious area created in the establishment of parking areas, trail creation and CXT type restroom structures located at the parking areas would not place any substantial demands on groundwater. The proposed parking areas would include storm water drainage systems. The proposed trails would not substantially alter the existing drainage patterns in the selected area.

Stream crossings should ideally be designed and constructed to fre-span the channel and be anchored above the top of bank. Crossings of regulated streams that avoid work below the ordinary high-water mark do not require a permit from the USACE. When merited, consultation with the CDFW and the Central Coast RWQCB would be integrated into the determination of selected crossings, even in situations where the crossings are located above the top of bank. If the CDFW and/or RWQCB have specific concerns for such work, their recommendations will be integrated into the design.

Where wetlands or streams cannot be avoided, appropriate approvals from the USACE (for impacts to regulated wetlands or areas below the ordinary high-water mark of regulated streams) and/or the RWQCB

and the CDFW (for impacts to regulated wetlands, riparian vegetation, or areas below the top of bank of regulated streams) shall be secured prior to initiating work in these areas. The measures included in any such authorizations shall be incorporated into the design.

Trails that are not stable and secure may be closed for public use until maintenance that brings the trail into compliance can be completed. Implementation of the PDF's identified in **Appendix D** would minimize and/or avoid water quality impacts to the ephemeral drainages and intermittent to perennial streams.

All storm water drainage as a result of the project would be managed on site and would not exceed the capacity of any storm water drainage system.

Table 4.7-1 below shows the number of miles of new trails in the six main watersheds of C-CD.

Table 4.7-1. Proposed Trail Distances Within C-CD Watersheds

Watershed Name	Alternative A	Alternative B	Alternative C	Alternative D
Scott Creek	0.07 miles	1.03 miles	1.10 miles	1.77 miles
Molino Creek	0.85 miles	1.87 miles	3.16 miles	5.35 miles
Agua Puerca Creek	0	5.63 miles	7.59 miles	6.29 miles
San Vicente Creek	0	0.63 miles	0.71 miles	0.63 miles
Liddell Creek	1.67 miles	1.56 miles	6.09 miles	2.57 miles
Yellow Bank Creek	0	6.69 miles	7.66 miles	8.65 miles
Laguna Creek	0	1.21 miles	1.21 miles	1.35 miles

4.7.2 Impacts Common to All Alternatives

As proposed day use areas under all alternatives would disturb one or more acres during construction, the proposed actions described would be required to comply with the National Pollutant Discharge Elimination System (NPDES) Permit and submit Permit Registration Documents to the State Water Resources Control Board (SWRCB) prior to the start of construction of the parking areas and trails. The Permit Registration Documents would need to include a Notice of Intent and a site-specific construction Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would describe the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction.

The proposed developments would require the establishment of construction protocols and maintenance guidelines that would ensure that the parking areas and proposed trails are stable and secure to the degree feasible through erosion prevention. In addition, the adaptive management strategies related to watershed protection would further ensure impacts would be less than significant.

Trails that do not meet these standards or comply with the protocols may be closed for public use until maintenance that brings the trail into compliance can be completed. With implementation of the guidelines and construction protocols and BMPs identified in the SWPPP, any water quality impacts during construction would be less than significant. Management guidelines included in MA-RIP-2 will also limit development of facilities within proximity (less than 100 feet) of perennial waterways on C-CD.

The CZU Lightning Complex burned 86,509 acres, and is by far the largest wildfire in recent history in the Santa Cruz/San Mateo County region. Approximately 1,052 acres of C-CD burned in this fire in the Molino, Agua Puerca, and San Vicente watersheds (**Figure 14**). Based on the lessons learned from the Lockheed Fire Post Fire Risk Assessment released by the San Mateo-Santa Cruz Unit of California Department of Forestry and Fire Protection on September 30, 2009, the principal concern with the CZU fire area is an increase in the potential for floods, debris torrents, and debris flows.

Also of concern is the long-term loss of mechanical support of hillslope materials in the upper portions of the Molino and San Vicente watersheds. In areas where the fire intensity was more severe, hydrophobic soils may have developed from waxy substances released by plant materials into the soil making portions of the slope impervious to water. Since these drainages are very steep, loose materials may mobilize into sediment laden masses during heavy rains, leading to the accumulation of debris that may flow downstream from the burned areas. The magnitude of post-fire damage will ultimately be determined by the intensity and duration of storms that impact the burn area, particularly during the winter of 2020-21.

To help characterize the potential risk from changes in hydrology due to the fire, the United State Geological Survey (USGS) conducted a post-fire debris-flow hazard assessment for the CZU Lightning Complex that is available on-line (USGS website, accessed on September 17, 2020). The areas most vulnerable to flash floods and debris flows are located on private and State lands approximately 5-10 miles north of Cotoni-Coast Dairies, including the Waddell Creek and Scott Creek watersheds and their tributaries. Additionally, there are two moderate basin hazard ratings on private lands adjacent to the Cotoni-Coast Dairies known as the San Vicente Redwoods. The remainder of the burned area in the San Vicente Creek watershed is rated as low basin hazard. Burned areas to the south with low basin hazard ratings include the upper units of Henry Cowell Redwoods State Park and Wilder Ranch State Park.

4.7.3 Impacts of Alternative A (No Action)

Recreation

The proposed Liddell Creek trail system would have more indirect minor adverse impacts on water resources than other alternatives because it has the greatest length of trail situated in the riparian corridor. As a result, there is more potential for off-trail use and dogs entering into the creek. Adverse impacts would be concentrated in the Molino and Liddell Creek watersheds (Table 4.7-1). The potential adverse impacts to water resources under Alternative A would be reduced with implementation of the PDFs described in **Appendix D**. The proposed parking areas would be situated within a 100-year flood hazard area. Therefore, the proposed projects on Bonny Doon Road and Swanton Road could impede or redirect flood flows.

Livestock Grazing

Under Alternative A, livestock grazing would be authorized on 1,167 acres. The proximity of livestock to perennial waterways at Molino, Agua Puerca, Yellow Bank and Laguna Creeks will continue to have moderate adverse impacts on water quality in those waterways.

Special Management Areas

No designation of Special Management Areas would have no effect on water resources.

4.7.4 Impacts of Alternative B

Recreation

Under Alternative B, recreation impacts from trails would be concentrated in Agua Puerca and Yellow Bank Creek watersheds, with some impacts within the Laguna, Liddell, and Molino Creek watersheds (Table 4.7-1). Through incorporation of PDFs (**Appendix D**), impacts from sediment are anticipated to be minor. There would be fewer miles of trail in riparian areas under Alternative B as compared to Alternative A. Therefore, adverse impacts to water resources are expected to be less under Alternative B than under Alternative A.

Livestock Grazing

Under Alternative B, livestock grazing would be authorized on more acres (2,229 acres) than Alternative A, but the number of head would be the same as Alternative A. The proximity of livestock to perennial waterways at Molino, Agua Puerca, Yellow Bank and Laguna Creeks will continue to have moderate adverse impacts on water quality in those waterways. Actions under Alternative B to exclude livestock

from riparian areas and springs will minimize these adverse impacts and have a long-term beneficial impact on water resources.

Special Management Areas

Designation of Special Management Areas would have a positive long-term impact on water resources in the Laguna, Liddell, and San Vicente Creek watersheds.

4.7.5 Impacts of Alternative C

Recreation

Under Alternative C, recreation impacts from trails would be greater than Alternative B and more widespread across the property. The greatest impacts would be in the Agua Puerca, Liddell, and Yellow Bank Creek watersheds (Table 4.7-1). Through incorporation of PDFs (**Appendix D**), impacts from sediment are anticipated to be less than significant. There would be fewer miles of trail in riparian areas under Alternative C as compared to Alternative A, but more impacts due to stream crossings than Alternative B. Therefore, impacts to water resources are expected to be less than Alternative A but more than Alternative B.

Under Alternative C, off-trail hiking and off-leash dogs would be allowed on C-CD. This could result in moderate adverse impacts to water resources where users access riparian, wetland, and spring areas.

Livestock Grazing

Under Alternative C, livestock grazing would be authorized on more acres (2,973 acres) than Alternatives A and B. The proximity of livestock to perennial waterways at Molino, Agua Puerca, Yellow Bank, Liddell and Laguna Creeks will have moderate adverse impacts on water quality in those waterways. Actions under Alternative C to exclude livestock from riparian areas and springs will minimize these adverse impacts and have a long-term beneficial impact on water resources.

Special Management Areas

Designation of Special Management Areas would have a positive long-term impact on water resources in the Laguna and Liddell watersheds.

4.7.6 Impacts of Alternative D

Recreation

Under Alternative B, recreation impacts from trails would be greater than Alternative B but less than Alternative C. Impacts would be concentrated in Agua Puerca and Yellow Bank Creek watersheds (Table 4.7-1). Through incorporation of PDFs (**Appendix D**), impacts from sediment are anticipated to be less than significant. There would be fewer miles of trail in riparian areas under Alternative D as compared to Alternative A. Therefore, impacts to water resources are expected to be less under Alternative D.

Livestock Grazing

Under Alternative D, livestock grazing would have similar impacts as described under Alternative B. The use of targeted grazing for fuel reduction could have a long-term moderate beneficial impact by reducing the potential for catastrophic wildfire, with subsequent erosion and sedimentation.

Special Management Areas

Designation of Special Management Areas would have a positive long-term impact on water resources in the San Vicente Creek watershed.

4.8 Soil Resources

Protection of soil resources involves controlling erosion and sediment transport, maintaining vegetation cover, and protecting biological and physical characteristics of soils. Analysis of the effects of herbicide application on Soil Resources is analyzed in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

4.8.1 Introduction

The management goal for soil resources established by the CCNM RMP (BLM 2005a) is to prevent soil erosion and compaction and maintain soil function in order to support vegetation and habitat. Soils are the foundation of terrestrial ecosystems and provide important functions of substrate anchorage for organisms and supply water and nutrients.

To achieve this goal, the CCNM RMP (BLM 2005a) established the following objectives:

- Prevent soil erosion and compaction
- Maintain soil fertility, water infiltration and retention, and vegetative cover

Project Design Features (PDF)

Implementation of the PDFs developed to protect soil resources will reduce soil disturbance, restrict access during wet weather, and require maintenance at specific sites. The soil protective PDFs include:

- Minimize soil disturbance by limiting developments to the smallest area possible and by using previously disturbed areas and existing roads to the extent practicable.
- Minimize surface disturbance and design disturbed areas on steep slopes to prevent surface water from concentrating to reduce erosion and sedimentation.
- Restrict access and suspend authorized projects during wet weather when soil resources will be detrimentally affected by rutting, compaction, and increased erosion.
- Minimize fire control lines, including both handline and dozer line, to the width necessary to effectively stop fire spread. Rehabilitate lines by smoothing out berms and installing waterbars prior to the rainy season.
- Assess the need for soil stabilization following wildfires. Use the Emergency Stabilization and Rehabilitation process to determine and implement needed actions.
- Actively patrol public lands to prevent unauthorized off-road travel. If unauthorized routes are found, block access to minimize further soil disturbance and reduce the potential for erosion through rehabilitation action.
- New facilities shall be designed to maintain natural drainage and runoff patterns.
- The BLM retains the flexibility to delay or adjust implementation of components of the RMPA, as necessary, in response to the wildland fires.

4.8.3 Impacts of Alternative A (No Action)

Recreation

Long-term, permanent impacts to soil from the construction of new Day Use Sites including Swanton Gate and Bonny Doon comprises 1.75 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction from vehicle traffic.

Long-term, permanent impacts to soil from the construction of new trails comprises 0.84 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction and erosion from foot, hoof, and bicycle traffic.

Transportation and Travel Management

Continued long-term, permanent impacts to soils from continued use of the administrative route network comprises 33.36 acres total. Potential adverse impacts to soil may include compaction and erosion from vehicle traffic.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Uneven cattle grazing distribution and congregation has resulted in localized trampling in some areas of C-CD, in particular in the drainages (riparian areas) and lowest elevations. The soil in these areas exhibits minor to moderate compaction and erosion.

The exclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have little to no effect on soil. Alternative vegetation management methods including livestock grazing and mowing would continue. Since both grazing and mowing generally only reduce the stature of herbaceous vegetation and not remove it, vegetative cover would remain to protect the soil from erosion.

Special Management Areas

No designation of Special Management Areas would have no effect on soils.

4.8.4 Impacts of Alternative B

Recreation

Long-term, permanent impacts to soil from the construction of new Day Use Sites including Warrenella Gate, Warrenella Top and Marina Ranch comprises 9.39 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction from vehicle traffic.

Long-term, permanent impacts to soil from the construction of new trails comprises 9.18 acres total. Long-term, permanent impacts to soil from the construction of new trails comprises 0.84 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction and erosion from foot, hoof, and bicycle traffic.

Transportation and Travel Management

Continued long-term, permanent impacts to soils from continued use of the Administrative route network comprises 33.36 acres total. Potential adverse impacts to soil may include compaction and erosion from vehicle traffic.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of water troughs in uplands and improved fences to better distribute livestock grazing should have moderate to major, long-term, beneficial effects on soils by reducing congregation and trampling that cause soil compaction and erosion.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have short-term, minor, localized adverse effects on soil. Herbicide application and prescribed fire would remove vegetative cover for a short period of time, possibly resulting in soil erosion if the vegetative cover doesn't recover within a few years. Since most vegetation management will be focused on grasslands and coastal scrub, which rapidly regains vegetative cover within a few years, the probability from adverse effects to soil in these vegetation types is anticipated to be low. Areas with persistently low vegetative

cover and increased potential for soil erosion can be treated with erosion control measure including seeding with sterile barley, native plant seeding, and installation of straw rolls and straw bales.

Special Management Areas

Designation of Special Management Areas would have no direct effect on soils.

4.8.5 Impacts of Alternative C

Recreation

Long-term, permanent impacts to soils from the construction of new Day Use Sites including Swanton Gate, Warrenella Gate, Warrenella Top and Marina Ranch comprises 10.74 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction from vehicle traffic.

Long-term, permanent impacts to soils from the construction of new trails comprises 11.49 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction and erosion from foot, hoof, and bicycle traffic.

Transportation and Travel Management

Continued long-term, permanent impacts to soils from continued use of the Administrative route network comprises 33.36 acres total. Potential adverse impacts to soil may include compaction and erosion from vehicle traffic.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of water troughs in uplands and improved fences to better distribute livestock grazing should have moderate to major, long-term, beneficial effects on soils by reducing congregation and trampling that cause soil compaction and erosion.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have short-term, minor, localized adverse effects on soil. Herbicide application and prescribed fire would remove vegetative cover for a short period of time, possibly resulting in soil erosion if the vegetative cover doesn't recover within a few years. Since most vegetation management will be focused on grasslands and coastal scrub, which rapidly regains vegetative cover within a few years, the probability from adverse effects to soil in these vegetation types is anticipated to be low. Areas with persistently low vegetative cover and increased potential for soil erosion can be treated with erosion control measure including seeding with sterile barley, native plant seeding, and installation of straw rolls and straw bales.

Special Management Areas

Designation of Special Management Areas would have no direct effect on soils.

4.8.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Long-term, permanent impacts to soils from the construction of new Day Use Sites including Swanton Gate, Warrenella Gate, Warrenella Top and Marina Ranch comprises 9.38 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction from vehicle traffic.

Long-term, permanent impacts to soils from the construction of new trails comprises 11.61 acres total. Potential adverse impacts to soil may include topsoil removal during construction and subsequent compaction and erosion from foot, hoof, and bicycle traffic.

Transportation and Travel Management

Continued long-term, permanent impacts to soils from continued use of the Administrative route network comprises 33.36 acres total. Potential adverse impacts to soil may include compaction and erosion from vehicle traffic.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Installation of water troughs in uplands and improved fences to better distribute livestock grazing should have moderate to major, long-term, beneficial effects on soils by reducing congregation and trampling that cause soil compaction and erosion.

The inclusion of herbicide use and prescribed fire as large-scale vegetation management methods would have short-term, minor, localized adverse effects on soil. Herbicide application and prescribed fire would remove vegetative cover for a short period of time, possibly resulting in soil erosion if the vegetative cover doesn't recover within a few years. Since most vegetation management will be focused on grasslands and coastal scrub, which rapidly regains vegetative cover within a few years, the probability from adverse effects to soil in these vegetation types is anticipated to be low. Areas with persistently low vegetative cover and increased potential for soil erosion can be treated with erosion control measure including seeding with sterile barley, native plant seeding, and installation of straw rolls and straw bales.

Special Management Areas

Designation of Special Management Areas would have no direct effect on soils.

4.9 Paleontological Resources

4.9.1 Introduction

Paleontological resources include any fossilized remains, traces, or imprints of organisms preserved in or on the Earth's crust. The goals for paleontological resource management in the CCNM are identified in the CCNM RMP (BLM 2005a), and include inventory and monitoring, protection, data recovery, research, and education and interpretation. The same goals of the CCNM RMP are required by Federal agencies under the Paleontological Resources Preservation Act (PRPA) of 2009.

The analysis of direct and indirect effects to paleontological resources is focused on rock formations where fossils are known or suspected to occur within the planning area. The Potential Fossil Yield Classification (PFYC) system was used to rank rock formations at C-CD based on the presence, type, and abundance of significant paleontological resources and the potential for land uses to impact the them.

Types of Impacts

Impacts to paleontological resources may be direct or indirect. Direct impacts are the direct or immediate effects of an action on paleontological resources. Direct impacts to paleontological resources include construction and earth moving activities that impact fossil-bearing bedrock and degrade or destroy the fossils contained within. Indirect impacts are those effects that are caused by or will result from the action, later in time or farther removed in distance, but are still reasonably certain to occur. Examples of indirect effects to paleontological resources include permanent vegetation removal that results in long-term, excessive soil erosion, thereby exposing potentially fossil bearing bedrock at the surface and subjecting it to accelerated erosion and weathering.

Assumptions

Assumptions used in this impact analysis include the following:

- Paleontological resources are sensitive to impacts, which are irreversible, and result in irretrievable loss.
- Paleontological resources derive their data value from their integrity and context within the geologic formation. Therefore, destruction and/or position disturbance of paleontological resources effectively destroys the information they contain.
- Paleontological resources in the planning area have been buried, destroyed, or altered by natural agents (erosion and deposition) and human activity. Such disturbance from natural and human agents is likely to continue.
- Management activities have the potential to cause irreversible disturbance and damage to paleontological resources. The BLM could mitigate impacts to these resources from authorized uses through project avoidance, redesign, and, if necessary, data recovery investigations, in accordance with Handbook H-8270-1 and BLM IM 2016-124.

Project Design Features

- No construction activities shall occur without prior written authorization of the authorized BLM officer based, in part, on completion of compliance with PRPA. Paleontological survey, monitoring, and mitigation may be necessary before or during surface disturbing activities.
- When significant paleontological resources are identified as being present, the project could be redesigned or modified to the extent feasible to avoid impacts.
- Where avoidance or adequate protection of scientifically significant paleontological resources is not feasible, salvage, excavation, and collection may be conducted. Scientifically significant paleontological

resources shall be deposited at a BLM approved repository, such as the University of California Museum of Paleontology (UCMP).

4.9.2 Impacts Common to All Alternatives

Construction activities including grading, digging, and trenching often result in disturbance deep into the soil profile and may disturb and expose the underlying bedrock. Unimproved dirt trails, roads, parking areas, and support pads for infrastructure in relatively level areas are typically constructed by removing topsoil to expose the more stable subsoil and bedrock for support. Construction of these features on slopes typically requires cut and fill with high probability of removing the entire soil profile and disturbing and exposing bedrock. Erosion of unimproved dirt trails, roads, parking areas, and infrastructure support pads may result in further exposure and erosion of the underlying potentially fossil-bearing bedrock. Additionally, maintenance of these features from grading, drainage ditch clearing, and bank stabilization may result in further disturbance of potentially fossil-bearing bedrock.

Potential impacts to significant paleontological resources can be mitigated by field surveys to assess the presence and abundance of fossils. If significant paleontological resources are discovered, the project can be redesigned or relocated. Finally, if adverse impacts to paleontological resources can't be avoided, then fossil salvage, excavation, and collection may be conducted. Paleontological resources monitoring is conducted during construction activities that disturb rock formations with PFYC ≥ 3 .

Recreation

All new trail, road, and parking area construction is located entirely within areas of C-CD underlain by PFYC ≤ 3 rock formations. For the construction of the majority of these new features, it is anticipated that disturbance will not be deeper than the soil profile which is 1 to 3 feet deep. For the construction of features on landscapes where potentially fossil-bearing bedrock may be disturbed (e.g. some lengths of new trail on slopes), paleontological resource monitoring will be conducted. Following the construction phase, casual paleontological resource monitoring will be conducted long-term where the constructed features exposed bedrock and regular maintenance will be conducted through grading, drainage ditch clearing, and bank stabilization.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

Vegetation management would have no impacts on paleontological resources. It is not anticipated that any vegetation management activities will result in permanent vegetation removal anywhere at C-CD.

Special Management Areas

Designation of Special Management Areas would have no impacts on paleontological resources.

Transportation and Travel Management

Regular maintenance of the BLM C-CD Administrative route (road) network and utilities, pipelines, telecommunications, and other rights-of-ways roads will include road bed grading, clearing of drainage ditches, and occasional road bank stabilization. Casual paleontological resource monitoring will be conducted long-term where these constructed features exposed bedrock and disturbance of the bedrock will continue to occur with regular maintenance.

4.10 Visual Resource Management

This section describes the types of potential impacts the range of alternatives could have on visual resources in the planning area, and it addresses the types of mitigation that could be implemented to lessen the degree of the impacts, where applicable. Analysis of the effects of herbicide application on Visual Resources is analyzed in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

4.10.1 Introduction

A visual resource impact analysis involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments meet the class management objectives established for the area or whether design adjustments may be required.

Assumptions

The impact analysis is based on the following assumptions:

- The public would continue to value landscape appearance as a resource to be managed in the CCNM.
- The infrastructure associated with management activities would remain relatively unchanged over the life of the RMPA.
- Recreational use would continue to increase over the life of the RMPA, increasing the value of unmodified landscapes.
- Existing infrastructure as described in Chapter 3, Lands and Realty and in Chapter 3 Livestock Grazing:
 - *Would be inconsistent with the VRM Class I objective;*
 - *Would likely be inconsistent with the VRM Class II objective;*
 - *May be inconsistent with the VRM Class III objective; and*
 - *Would be consistent with the VRM Class IV objective.*

Impacts to visual resources are considered major if they substantially change or degrade the character of the landscape as seen from sensitive viewsheds, or if the allowable modifications conflict with VRM objectives. While topography can allow for some landscape modifications, many types of disturbance, such as roads and built structures, can impact the landscape depending on their size, distance, topographic position, presence or absence of screening, and contrast with surrounding conditions.

Types of Impacts

Construction of recreational facilities would promote the types of visible landscape contrasts associated with recreation. The equipment necessary for clearing vegetation and grading landforms during the construction and maintenance phases would result in direct, short-term contrasts of an episodic and transient nature. Movement and activity of construction machinery would draw the observer's attention to form and color contrasts. Construction equipment and activities would promote the occurrence of traffic and dust resulting in short-term landscape contrasts. The actions of parking and route construction would result in long-term contrasts in form, line, color, and texture. Form and color contrasts would diminish somewhat as areas transition from construction to the operational phase, largely due to the absence of large equipment movement and activity. Utility corridors, fuel breaks, and other linear areas cleared of vegetation would result in contrasts in line, color, and texture that could also result in long-term contrast.

Restoring ponds near routes and trails may draw the eye of the casual observer and could increase landscape contrasts in different ways depending on the relationship of water and vegetation surrounding the ponds.

The RMPA is a planning document, and indirect and cumulative effects of development inform the planning decision. A qualitative analysis for these impacts, as opposed to a quantitative analysis is appropriate because it provides a reasonable forecast of effects, but does not speculate on the direct effects to visual resources from the range of alternatives presented in the RMPA.

4.10.2 Impacts Common to All Alternatives

For all alternatives, management activities would minimize the change to the characteristic landscape to the extent practicable in accordance with the VRM Class Objective for that location.

Recreation

Recreational trails would have a negligible to minor adverse impact on scenic quality with the use of appropriate project design features (**Appendix D**).

Vegetation Management, including Livestock Grazing

Continued grazing of 149 head of cattle in the Marina, Delones, Borego, Big Ranch (Lower Newtown), Upper Newtown, and Yellow Bank allotments would have no impact on scenic quality. Changes to livestock use could have indirect minor to moderate, beneficial to adverse impacts on scenic quality depending on effects to vegetation and water quality. Changes to livestock infrastructure could have direct minor to moderate, beneficial to adverse impacts on scenic quality. Implementation of SOPs and mitigation measures could be utilized to minimize potential adverse impacts to have negligible impacts on VRI ratings.

Transportation and Travel Management

Continued long-term, permanent impacts from continued use of the Administrative route network would have no impact on scenic quality and is consistent with current VRM objectives.

Special Management Areas

Designation of Special Management Areas would have no direct effect on scenic quality as there would be no visual change to the landscape.

Project Design Features and Best Management Practices

Project Design Features (PDF's) include the types of measures that could be implemented to lessen the degree of potential adverse visual impacts from development (**Appendix D**). These measures incorporate the fundamental principles in the VRM system upon which the VRM BMPs are based and include proper site selection, minimizing visual contrast, reducing unnecessary surface disturbance, exercising proper color selection, and restoration of impacted landscapes.

4.10.3 Impacts of Alternative A (No Action)

Under Alternative A, all lands would be managed under Visual Resources Management (VRM) Class I with the exception of the two access points identified in the Interim Management Plan which will be managed as a VRM class III. Implementation of Designated trails would be consistent with Class I objectives if appropriate PDF's are utilized. Under this alternative there would be negligible, adverse impacts to scenic quality. The implementation of the two access points and trails would be consistent with the VRM class ratings with the use of project design features.

Neither of these access points is visible from key observation points along US Highway One. Both access points would be visible from the county-designated scenic byways on Bonny Doon and Swanton Roads.

4.10.4 Impacts of Alternative B

Under this alternative, the Warrenella Road Gate and Marina Ranch parking areas are located within a VRM Class III objective. The areas currently rate as a VRI Class II rating and the parking areas would have

a localized moderate to major adverse impact on scenic quality. Under this alternative these areas *would be consistent* with the VRM Class III objective. Use of PDF's would reduce the impacts on scenic quality to a very localized impact area surrounding the footprint of the parking area, such that the parking areas would not dominate the view of the casual observer from the upper terraces or from the access roads. Under this alternative, the Warrenella Road (Top) parking area is also managed with a VRM Class III objective. This parking area would have a minor impact on scenic quality because the proximity to the existing substation means that the addition of a parking area will cause a low change to the characteristic landscape.

The three proposed parking areas would be largely obscured from key observation points along US Highway One due to topography and vegetative screening. Improvements to the access road to the Marina Ranch Gate access point would be visible from US Highway One and would have a moderate adverse impact on visual resources. None of the proposed parking areas would be visible from county-designated scenic byways on Bonny Doon and Swanton Roads.

4.10.5 Impacts of Alternative C

Under Alternative C, the Swanton and Yellow Bank access points will be managed as a VRM Class III objective. These sites are located within a current VRI Class II rating and the parking areas would have a localized moderate to major adverse impact on scenic quality. The Swanton access point would be seen from Swanton Road but the use of Mitigation Measures could reduce the impact to negligible levels outside the footprint of the parking area. The Yellow Bank parking area would include a pedestrian bridge that would be visible from State Highway 1. Although Mitigation Measures could reduce the impact substantially, there will be a minor to moderate direct adverse impact to scenic quality. Topographical features would result in negligible impacts to scenic quality from the upper terraces. Both access points *would be consistent* with a VRM Class III objective with the implementation of PDF's.

The three proposed parking areas would be largely obscured from key observation points along US Highway One due to topography and vegetative screening. None of the proposed parking areas would be visible from county-designated scenic byways on Bonny Doon and Swanton Roads.

4.10.6 Impacts of Alternative D (Preferred Alternative)

Under Alternative D, the Yellow Bank access points will be managed as a VRM Class III objective to accommodate a connection with the North Coast Rail Trail. The BLM and other partners would design an overpass (or underpass) that would avoid significant impacts to the scenic quality of the region. Other sites proposed for development are located in areas with current VRI Class II ratings, including Warrenella Road, and Marina Ranch Road. Construction of these parking areas would have short-term (moderate) adverse impacts on scenic quality, but PDF's (**Appendix D**) to retain the contours and contrast of the surrounding landscape and provide visual screening would mitigate these effects within a few years. Although there will be a minor long-term adverse impact to scenic quality with proximity of the proposed parking areas, the BLM's management of the Marina Ranch Road, Warrenella Road, and Yellow Bank access points *would be consistent* with a VRM Class III objective with the implementation of PDF's.

4.11 Recreation

4.11.1 Introduction

Recreational resources include day-use facilities, multi-use trails systems, camping areas, dispersed recreation areas, and access roads. This Chapter analyzes the impacts of recreation on recreation resources based on implementation of the actions described in Chapter 2. For reference, **Table 2.19-2** provides a comparison of area of proposed development for parking /day use sites; **Table 2.19-3** identifies the total length of trails by RMZ for each alternative, as applicable; **Table 2.19-4** identifies the new length of trail proposed for construction by RMZ; and **Table 2.19-5** identifies the length of trails that overlap with existing (baseline) roads.

Assumptions

- The BLM would provide adequate visitor services and information, meet Universal Accessibility Standards, and stress compliance with “leave no trace” principles.
- Cooperative assistance agreements, resource protection measures including exclusionary fencing and barrier construction, interpretation and education, and law enforcement would have major long-term beneficial impacts on recreation resources.
- Special recreation permits (SRPs) would ensure authorized activities are compatible with other recreational users in that zone.
- Trail locations, educational programming, and signage would be used to reduce potential for trespassing from public land onto private land.
- Enforcing regulations for visitor safety or resource protection would help to reduce conflicts with other users and would ensure additional protection of sensitive resource areas.
- Under all alternatives, the BLM would close trails under wet weather conditions when continued use of the trails could cause damage to the trails or endanger public safety.
- The BLM retains the flexibility to delay or adjust implementation of components of the RMPA, as necessary, in response to wildland fires.
- Analysis of the effects of herbicide application on Recreation is analyzed under Recreation, Social and Economic Values, and Human Health and Safety in the Weed Management Plan (**Appendix F**).
- Refer to **Appendix G** for the Cotoni-Coast Dairies Visitor Use and Parking Estimates.

Project Design Features

Example of PDF’s relevant to the recreation management in **Appendix D** include:

Gates and fences would be installed to block vehicular access, resulting in long-term beneficial effects on recreation from a new trail system for a wide range of visitors and opportunities for recreation.

All alternatives would utilize signage and interpretive information to provide education for visitor’s safety and resource protection. These measures would result in long-term moderate beneficial impacts, reducing the likelihood of trespassing onto private land and health risks to visitors (such as poison oak, ticks, etc.).

Visitor use following extreme weather can cause damage to trail surfaces. Extreme conditions also create a higher potential for accidents between user groups due to decreased braking/stopping ability. Closing trails under wet weather conditions when continued use of the trails could cause damage to the trails or endanger public safety would have long-term beneficial effects on recreation because it would preserve the trail system and promote public safety.

Public use of parking area and trails would be limited to daylight hours. The construction and operation of the proposed parking area and trails would be implemented in multiple phases.

The proposed parking areas would be designed to control storm water drainage and meet ADA standards.

Trail design guidelines are intended to facilitate the design and construction of trails. For example, The BLM would improve existing roads to address erosion and reduce disturbance of the surrounding landscape. Likewise, appropriate crossing structures would be installed at stream crossings, such as bridges or culverts.

New trails would be created where existing routes are not able to provide desired recreational experience. The BLM would limit the amount of new trails in riparian areas, and routes would generally be located such that drainage areas are crossed at locations above the ordinary high water mark of stream banks to avoid sedimentation issues.

Boundary fences, gates, and appropriate signage would be installed at entrance points for C-CD roads and trails. This would allow BLM to close access to trails to the public when needed. Fencing would be designed to ensure wildlife passage.

Most trail construction would occur by hand with limited use of heavy machinery or vehicles. The use of heavy machinery or vehicles would be limited to areas with existing vehicular access (such as former logging roads) with the exception of the parking area, which would require the use of standard construction machinery and equipment.

Some activities would require a special recreation use permit if they are either (1) identified as commercial use, (2) would take place outside of daylight hours, or (3) would not be limited to designated public access trails and use areas. Permits will also be required for non-commercial groups with more than 20 individuals, any special events (such as organized trail runs), or any off-trail activities.

Signage and visitor education would instruct visitors to pack out and/or properly dispose of all waste. The BLM would also use outreach and education to increase compliance with parking, litter, dogs, and the introduction of non-native plants and animals.

Monitoring would inform the adaptive management strategies and decisions to ensure the protection of natural resources on the property.

4.11.2 Impacts Common to Alternatives

Each of the alternatives would allow for a different level of facility development, but the overall approach to C-CD management includes integrating preservation, restoration, and livestock grazing along with enabling research, education, and recreation. Providing access for research, education, and recreation is also a component of the deed restrictions and presidential proclamation for the C-CD unit of the CCNM. Facilities that could be added include development to primitive areas. Impacts would depend on the location and extent of constructed facilities; resulting in long-term minor adverse impacts if only a few facilities were added on or adjacent to previously disturbed, and long-term moderate adverse impacts if more facilities were constructed. The RMPA also seeks to protect cultural resources and permit some level of access to special areas. If during implementation, a special resource is encountered or if a special study is under way, recreation may be restricted from that area for a limited time. The restricted area would likely be small and also fenced or otherwise marked as restricted.

Under all alternatives, the BLM would incorporate policies, design guidelines, construction standards, trail maintenance guidelines, and rules and regulations to reduce and/or avoid impacts to the environment as a result of construction and operation of the proposed parking area and trails to the extent feasible. As a result, the RMPA is expected to increase recreation opportunities; protect open space and cultural resources; and conserve natural resources. The BLM would also enforce policies to sustain a healthy and safe environment for visitors to C-CD.

A range of alternatives were considered for the location of trails that are the most sustainable over the long-term. Options for allowable uses were considered by eliminating uses that were already prohibited under the C-CD deed restrictions, the CCNM RMP (BLM 2005), or California State regulations for hunting and

fishing. Recreational activities prohibited under the range of alternatives include motorized off-highway vehicle use, target shooting, and fishing.

Commonly, visitors seek destinations like C-CD for the purpose of use and/or enjoyment. Conflicts between user groups on multi-use trails are inevitable with a growing population and increased pressure for places to recreate. With proper design, a variety of trail experiences, education, stewardship from the trail community and adequate signage these conflicts can be greatly reduced. Conflicts near trailheads are inherently higher due to increased congestion near parking areas. Each contact can result in a potential conflict.

Policies ensuring that Universal Accessibility Standards under the Americans with Disabilities Act would have a long-term moderate beneficial impact on recreation. Visitors with disabilities would have an improved recreational experience at C-CD, given improved access to recreational trails and other facilities.

The use of exhibits and interpretive facilities is an important and positive mechanism for directing visitors to areas most able to withstand recreational activities. Guided tours and other educational activities would be used as teaching tools to promote awareness and appreciation for C-CD.

Additionally, web-based and print media would be an effective tool for assisting recreationists in planning visits to the public lands. Establishing expected behaviors and actions before a visitor arrives is the best way to minimize impacts between users/individual recreationists and natural/cultural resources. For example, the requirement to keep dogs on a leash reduces negative impacts between visitors with dogs and other recreationists; hikers moving downhill need to yield to hikers going uphill; and hikers passing or trail running need to verbalize their intentions and pass where safe to do so.

4.11.3 Impacts of Alternative A (No Action)

Recreation

Public lands designated as Extensive Recreation Management Areas (ERMAs) are typically managed for more dispersed recreation with less oversight of facilities (e.g., trails, parking areas). The designation of an ERMA is an administrative action and does not result in any direct physical environmental impacts.

This alternative has the lowest potential for visitor conflicts because there's only one allowable use on trails (hiking). This alternative also has the lowest potential for direct adverse impacts from off-trail use and/or hunting because they are prohibited under this alternative.

Demand for public land recreation is largely be driven by external factors related to population and the competition for recreation space. The speed at which recreation use grows can be affected by the extent to which BLM management results in favorable recreational opportunity and promotes the use of public lands for recreation. Due to the small size of proposed parking lots, limited number of proposed trails, and low number of proposed allowable uses, recreation management under Alternative A are considered to be inadequate to meet current demand and expectations within the region. The absence of new, adequate recreation facilities proposed under Alternative A would result in a long-term, moderate, adverse impacts on recreation opportunities in the planning area as regional recreation demand continues to grow. For example, conflicts can arise where poor signage or lack of facilities result in uncontrolled parking, poor sanitation, and other undesirable visitor behaviors. In addition, the lack of connectivity under Alternative A to adjacent regional trail systems could lead to conflict between the BLM and neighboring land managers.

Recreation fees would not be implemented under Alternative A. This would have an adverse impact on the BLM's ability to monitor, patrol, and implement needed facility repairs and maintenance on the property. As the recreational development proposed under Alternative A is not nearly as extensive as other alternatives, this impact is anticipated to be minor.

Vegetation Management, including Livestock Grazing

Management actions for biological resources under Alternative A may preclude recreational activities at certain times. This includes restricting recreational activities near ponds, wetlands, or restoration sites to restrict visitors and pets from entering sensitive habitats. Other existing or planned developed water sources (i.e., rangeland improvement projects) would attract native and non-native wildlife species and special status species. The indirect impact would cause potential recreational user limitations. These restrictions are generally limited to very small areas, and may or may not be limited to a certain time frame. While restricting recreation to a reduced area, even temporarily, would create additional burden on the surrounding recreation areas, the intent of these restrictions is to enhance the biological or ecological resources in the area, which in the long-term should enhance the recreation user's experience.

The presence of livestock grazing operations in close proximity to the Molino Creek trail could result in minor adverse impacts to recreationists who are unaccustomed to the presence of livestock. However, due to the short length of trail in proximity to grazing operations, this impact is anticipated to be minor.

Transportation and Travel Management

Under Alternative A, the ability of the public to access the C-CD is extremely limited, especially those areas far from other public roads or in areas where the terrain is difficult to access by foot or the distance to the destination is too great. The proposed parking areas under this alternative are smaller than the other alternatives, and located in areas that are relatively difficult to access.

Special Management Areas

There would be no direct or indirect impacts from special area management under Alternative A.

4.11.4 Impacts of Alternative B

Recreation

Designation of C-CD as an SRMA would allow the BLM to plan, expand, or restrict certain uses. Because of the popularity of these areas and the proximity to large urban centers, the ability to plan is critical. This would provide long-term beneficial impacts to recreation.

Alternative B would allow for additional recreational opportunity over current management, including improved hiking, mountain biking, dog walking, horseback riding, and hunting opportunities at C-CD. Implementation of a seasonal parking area at Warrenella Road Top would provide a unique experience for mobility-impaired visitors to view expansive ocean views.

The BLM would coordinate with CDFW to establish the only public hunting opportunity in Santa Cruz county. Hunting would be limited to RMZ 2 and administered similar to other special hunts in California to avoid conflicts with other recreationists. For example, the BLM and CDFW would restrict the number of hunting permits to issue - based on a lottery system - to address potential concerns associated with public safety. Furthermore, the BLM would provide notice to hunters and other recreationists during the open season to inform and educate visitors when and where hunting activity is allowed in RMZ 2. To avoid potential impacts on adjacent properties; the BLM would publish maps that delineate areas in RMZ 2 that are closed to hunting near the community of Davenport, CA. These maps would be issued to licensed hunters that are permitted under the CDFW special hunt program to access C-CD.

Expanding the opportunities and places for recreation on the North Coast of Santa Cruz would likely reduce the number of recreationists in any given area, allow for a wider variety of recreation experiences, and improve the experience for those users. Alternative B offers good potential for new recreational opportunities that would ultimately relieve the pressures on crowded areas for the near to long-term, which the BLM considers a moderate beneficial impact.

The stacked loop trails that are considered under this alternative would span portions of RMZ 1 and RMZ 3. These trails would mainly traverse the marine terraces and distribute hikers and mountain bikers across the grassland habitats with limited stream crossings in the lower portions of the Molino Creek and Agua Puerca watersheds in RMZ 1. The trails in RMZ 3 would traverse the marine terraces and distribute hikers and equestrians across the grassland habitats with limited stream crossings in the lower portions of the Yellow Bank Creek and Laguna Creek watersheds in RMZ 1.

Maintaining the leash requirements for dogs would reduce disturbance to wildlife and other visitors. However, this alternative would result in more impacts from dogs because there are more miles of trails and opportunities for recreationists to bring their dogs on trails. For visitors unaccustomed to dogs, this could have a minor adverse impact as a result of additional conflict, while other visitors would benefit because dogs provide an extra sense of security; and the BLM expects that dog walking would be a popular activity at C-CD.

Mountain bikers “prefer to bike in natural/remote settings” (Nielsen et al. 2019). Alternative B would have a positive impact on the availability of natural/remote bike trail availability in Santa Cruz County. Connectivity to the San Vicente Redwoods, along with the addition of several new trails and parking areas will have positive impacts on recreational availability and accessibility and should decrease the parking pressure on San Vicente Redwoods and surrounding neighborhoods. New allowable uses would also be introduced on the trail systems under Alternative B, including mountain bike riding opportunities in RMZ 1 and equestrian use in RMZ 3. Introducing these new trail uses would increase the potential for conflicts with hikers, but it would prevent conflicts between mountain bikers and horses because the trails for each use are located in separate recreation management zones.

Mountain bikes and horses can decrease trail longevity (over a long period of time), particularly on natural surface trails such that trails will require more maintenance than trails utilized only by hikers (see Nielsen et al. 2019). This impact could be mitigated by working with partners to address trail maintenance needs. In addition, trail closures under wet weather conditions could minimize damage to trails.

Alternative B would allow BLM the flexibility to establish visitor use fees. The Proposed Resource Management Plan for the Southern Diablo Mountain Range and Central Coast of California and Final EIS (BLM 2006) suggests fees may exclude or detract certain visitors from participating in the activity for which the use fee is established. While this could adversely impact the population who cannot afford the fee, this would also have a minor beneficial impact in instances where overcrowding leads to less enjoyment of the activity or to environmental impacts. Fees may also provide services desired by recreationists, which the BLM considers a major beneficial impact.

PDF's, including proper and well-placed signage, would reduce conflicts significantly. Facilities would increase the demand for law enforcement, because the parking and day use areas would need to be included in patrol routes for law enforcement jurisdictions but they are in a rural area with limited patrols.

Vegetation Management, including Livestock Grazing

Alternative B would result in more trail use and development occurring in existing grazing allotments than under Alternative A. The Final EIS (BLM 2006) explains the presence of cattle near recreation sites may or may not affect the activities occurring at the site. Some observers enjoy seeing cattle on the landscapes, while the signs of livestock grazing, such as fences, manure, and stock ponds, may impact the natural aesthetic for some visitors and impair the ability to enjoy the scenery and/or the solitude of the area they are visiting. There can also be competition for shade during summer months. Additionally, the presence of livestock close to recreation users can cause some conflict, as there can be more frequent encounters on heavily used trails. Installation of fencing and use of natural barriers could help minimize some of the potential conflict between recreationists and livestock.

Transportation and Travel Management

Under Alternative B, the parking and day use areas would be greatly improved from Alternative A, especially in proximity to Warrenella Road, and the Yellow Bank Creek and Laguna Creek watersheds where the terrain is difficult to access. The proposed parking areas under this alternative are larger and located in areas that would have moderate long-term beneficial impacts on recreation resources in the planning area because they would accommodate the demand for vehicle trips and parking associated with recreation for up to 150,000 annual visitors at C-CD. The potential for conflicts with existing users on Warrenella Road would be reduced by limiting public access to weekends and seasonal closure of the Warrenella (Top) parking and day use area.

Special Management Areas

The Wild and Scenic River inventory process would identify where special management attention would be required to protect and prevent irreparable damage to outstandingly remarkable values associated with eligible river segments on C-CD. Under Alternative B, San Vicente Creek, Liddell Creek, and Laguna Creek would be recommended for WSR designation, and as such would result in a moderate beneficial impact to the recreation resources in those areas due to the elevated stature of the rivers in the national system.

4.11.5 Impacts of Alternative C

Recreation

The potential impacts of Alternative C are the same as Alternative B except that hikers, mountain bikers and equestrians would all be allowed on the trails in RMZ 1 and RMZ 3. These multiple use trails would bring diverse uses and increased visitation and likely result in a higher potential for conflicts between user groups because Alternative C has the greatest number of miles of trail available to hikers, bikers and equestrians.

The stacked loop trails that are considered under Alternative C would span larger portions of RMZ 1 and RMZ 3 than the other alternatives. As a result, the trails under this alternative would traverse steeper terrain and take visitors to remote portions of the property where emergency services would be difficult to provide. Recreational use in these areas would also impact a wider variety of wildlife habitats.

Under Alternative C, Class 1 and Class 2 low-speed electric bicycles (e-bikes) operated in the pedal assist mode would be allowed on trails that are designated as open to bicycle use. The use of an e-bike enables a biker to go faster up hills and go for a longer distance while exerting the same amount of energy as a biker on a traditional bicycle. This can lead to the perception that less skilled riders are given an unfair advantage and are likely to ride too fast and cause accidents (Nielsen et al. 2019). The advantage provided by an e-bike is anticipated to open the opportunity to more riders, which can have a beneficial impact on recreational opportunity for users who might not otherwise be able to utilize the trails and a potential adverse impact of additional riders leading to increased user congestion and conflict. The use of e-bikes can reduce the use of cars and the implementation of the North Coast Rail Trail (NCRT) may allow more riders to access C-CD via bike reducing the congestion in parking areas. The NCRT will allow the use of Class 1 and Class 2 e-bikes. The use of e-bikes is not expected to change the longevity of trails relative to more traditional bikes.

Because the San Vicente Redwoods Public Access Plan does not allow for e-bikes on their biking trails, in areas where trails connect between C-CD, the potential use of e-bikes under Alternative C and D may lead to regulatory conflicts. Appropriate signage and education should reduce the issue to relatively negligible levels.

Removing the leash requirements for dogs in certain areas under Alternative C would increase disturbance to wildlife and other visitors. This alternative would also result in more impacts from dogs because there are more miles of trails and opportunities for recreationists to bring their dogs on trails. However, the

impacts on recreation resources would be similar to Alternative B because the BLM would educate dog owners to avoid/minimize conflicts on designated routes or off-leash opportunity areas. Off-leash areas may have increased potential for conflict with other recreationists and other dogs. If these off-leash areas are located such that multiple user groups are not passing them to access trails, it will reduce the likelihood of conflict.

Under Alternative C, the BLM would reduce the potential effects of special recreation use permits (SRPs) by establishing initial maximum duration of permitted events that involve trail use; and developing recreation user education and awareness programs to inform the participants of the C-CD objects and values, encourage safe and environmentally responsible behavior, and increase patrol in areas with existing or new facilities, or in areas where heavy recreation use could impede restoration efforts or other existing land use activities.

Impacts associated with recreation fees would be the same as those described under Alternative B.

Vegetation Management, including Livestock Grazing

The impacts of biological resources management are the same as Alternative B.

Transportation and Travel Management

Under Alternative C, the parking and day use areas would be slightly improved from Alternative B, especially in proximity to Swanton Road where the terrain is difficult to access. The proposed parking areas under this alternative are larger and located in areas that would have major long-term beneficial impacts on recreation resources in the planning area because they would accommodate the demand for vehicle trips and parking associated with recreation for up to 250,000 annual visitors at C-CD.

Special Management Areas

The impacts of wild and scenic river recommendation are similar to Alternative B where special management attention would be required to protect the outstandingly remarkable values associated with San Vicente Creek and Laguna Creek due to the elevated stature of the rivers in the national system.

4.11.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Under Alternative D, the potential for visitor use conflicts would be similar to Alternative B because there are less miles of multiple use trails available than Alternative C. As shown in **Appendix A** on **Figure 7D**, proposed recreation opportunities for mountain biking and equestrian trail use would predominantly be separated into RMZ1 and RMZ3. Hikers would be allowed on all the trails in RMZ1 and RMZ3. Equestrian trail use would be prohibited in RMZ 1 to avoid conflicts with mountain bikers on multiple use trails. Similarly, mountain bikes (and e-bikes) would be prohibited on all the trails in RMZ3, *except* for the Yellow Bank South Loop Trail. As a result, there would be long-term benefits to recreation resources because the preferred alternative would allow C-CD visitors to take advantage of regional trail connectivity with the San Vicente Redwoods in RMZ 1 and the North Coast Rail Trail in RMZ 3.

However, the preferred alternative would prevent horseback riders from accessing the San Vicente Redwoods trail connection. Alternative D also precludes public camping, dogs off leash, and paragliding so the benefits to recreation resources are lower than Alternative C, greater than Alternative A, and substantially the same as Alternative B.

Based on comments from the County and others, the stacked loop trails that are considered under Alternative D would span smaller portions of RMZ 1 and RMZ 3 than Alternative C. For example, the BLM excluded trail segments under Alternative D that traversed steeper terrain where emergency services would be difficult to provide and recreational use would also impact a wider variety of wildlife habitats.

Under Alternative D, Class 1 and Class 2 low-speed electric bicycles (e-bikes) operated in the pedal assist mode would also be allowed on trails that are designated as open to bicycle use in RMZ1. The use of e-bikes is not expected to change the longevity of trails relative to more traditional bikes. The advantage provided by an e-bike is anticipated to open the opportunity to more riders, which can have a positive impact on recreational opportunity for users who might not otherwise be able to utilize the trails. Once the Panther Gap/Yellow Bank parking area and overpass are complete, there would be an increase in the number of cyclists accessing RMZ 3, including many that would arrive on e-bikes via the connection with the North Coast Rail Trail.

Allowing the use of e-bikes would reduce the number of visitors arriving in automobiles and reduce congestion in parking areas. The NCRT will allow the use of Class 1 and Class 2 e-bikes. However, the San Vicente Redwoods Public Access Plan does not allow for e-bikes on trails so the proposed use of e-bikes under Alternative D may increase conflicts in areas where trails connect with neighboring properties. Appropriate signage and education would minimize these impacts.

Under Alternative D, the BLM proposes to enforce leash requirements on all trails where dogs are allowed. The preferred alternative also prohibits dogs on certain trails to avoid disturbance to wildlife and other visitors. As a result, this alternative would have less recreational benefits for dog owners than Alternative C because there are less miles of trails and opportunities for recreationists to bring their dogs on trails. On the other hand, this would provide a moderate beneficial impact for users that are unaccustomed to dogs or would prefer a recreational experience that doesn't include dogs.

Under Alternative D, the BLM would reduce the potential effects of special recreation use permits (SRPs) by establishing initial maximum duration of permitted events that involve trail use; and developing recreation user education and awareness programs to inform the participants of the C-CD objects and values, encourage safe and environmentally responsible behavior, and increase patrol in areas with existing or new facilities, or in areas where heavy recreation use could impede restoration efforts or other existing land use activities. BLM will prefer events and activities that help develop the public appreciation of onsite resources.

The Federal Lands Recreation Enhancement Act (REA) provides authority for BLM to charge recreation fees and reinvest a majority of those fees into enhancing visitor services and facilities at the site of collection. This authorization provides the certainty needed to make long-term investments in an integrated system, sustain partnerships, and improve the recreation experience for visitor to the C-CD. Recreation fees collected under REA are reinvested at the collecting site to benefit the visitor through enhanced facilities and services. The REA also limits fee authority to locations with specific kinds of infrastructure and services. For example, the BLM may only charge market-rate fees at sites and for activities that meet certain specified criteria. Moreover, certain fees may *not* be charged for general access, dispersed areas with low or no investment, undesignated parking, or picnicking along roadsides or trails. The REA also requires that the Departments establish Resource Advisory Councils (RACs) so the local community, the recreation community, and the general public can provide input into fees established by BLM at C-CD.

Impacts from fees under Alternative D would be the same as those described for Alternative B. These fees are needed to support visitor use services and facilities, and they would provide a major beneficial impact to recreation resources in the region.

With regards to hunting, the preferred alternative still includes BLM coordination with CDFW to establish a public hunting opportunity in Santa Cruz County. However, hunting would be limited to archery only in RMZ 2. The CDFW would establish a special hunt program for Cotoni-Coast Dairies to ensure public safety and avoid conflicts with other recreationists. The BLM and CDFW estimate the number of hunting permits to be issued - based on a lottery system – would be similar to Canada de Los Osos in Santa Clara County. For example, there the CDFW hosts five permitted-hunts each year with two turkey hunts, two pig hunts and one deer hunt. Each hunt is a two-day period. For the Cotoni-Coast Dairies, the BLM anticipates the number of hunters for each hunt would be 2-4 people. The BLM, CDFW, and other partners would need to do some baseline surveys for deer in the area to determine how many individuals could be taken based on an annual survey.

Furthermore, the BLM would provide notice to hunters and other recreationists during the open season to inform and educate visitors when and where hunting activity is allowed in RMZ 2. To avoid potential impacts to residents of adjacent properties; the BLM would publish maps that delineate areas in RMZ 2 that are closed to hunting near agricultural operations and the communities of Bonny Doon and Davenport, CA. These maps would be issued to licensed hunters that are permitted under the CDFW special hunt program to access C-CD.

Expanding the opportunities and places for recreation on the North Coast of Santa Cruz would likely reduce the number of recreationists in any given area, allow for a wider variety of recreation experiences, and improve the experience for those users. Therefore, Alternative D offers good potential for new recreational opportunities that would ultimately help relieve the pressures in crowded areas for the near to long-term, which the BLM considers a moderate beneficial impact.

Vegetation Management, including Livestock Grazing

The impacts of biological resources management are the same as Alternative B.

Transportation and Travel Management

Under Alternative D, the parking and day use areas would be in locations similar to Alternative B, since the preferred alternative excludes development of parking facilities in proximity to Swanton Road and Bonny Doon Road. The BLM made other slight design improvements to address issues identified in public comments on the range of alternatives analyzed in the draft RMPA. For example, the proposed parking area at Warrenella Road Gate has more vehicle spaces and avoids direct impacts to Warrenella Road. The extra vehicle parking will also be good for accommodating organized groups with buses or vans. This small change would have major long-term beneficial impacts on recreation resources in the planning area because they would accommodate the demand for vehicle trips and parking associated with recreation for up to 250,000 annual visitors at C-CD.

The extra spaces for regular vehicles were incorporated into the Warrenella Road Gate parking area because equestrian use and trailer parking is not being considered in RMZ 1 under this alternative. Nevertheless, the new design is the same size (~1.62 ac.) as the previous Warrenella Road Gate proposal that was analyzed in the Draft RMPA for both action alternatives B and C (~1.61 ac.).

Special Management Areas

The impacts of wild and scenic river recommendation are similar to Alternative B and C where special management attention would be required to protect the outstandingly remarkable values associated with San Vicente Creek due to the elevated stature of the rivers in the national system.

4.12 Transportation and Travel Management

This section focuses on BLM roads and trails that provide access to, and through, BLM public lands. There is considerable overlap of travel management and all BLM uses on public lands. For example, many users of public lands are there for recreation. For visitors, a route system may serve as either a route to a destination or as the recreation location itself. For destination recreation, vehicle routes are the means to get to a starting point to engage in the activity, such as a parking area or trailhead.

To reduce the duplication of narrative between travel management and the other sections of this RMPA/EA, this section addresses only public travel and access concerns.

4.12.1 Introduction

Assumptions

The following assumptions were used to complete the analysis for transportation and access impacts from the proposed Resource Management Plan Amendment (RMPA):

- Future environmental analyses would be conducted, as appropriate, for project- and site-specific actions proposed in the CCONM.
- Table 2.19-2 provides the estimated disturbance for Draft Concepts and parking areas included in the Preferred Alternative (Alternative D).
- Refer to **Appendix K** for the Final Traffic Study for the Cotoni-Coast Dairies Project, prepared by W-Trans (Weinberger 2020).

4.12.2 Impacts Common to All Alternatives

New access roads would most likely be located within, or adjacent to, existing agricultural fields.

In general, the heavy equipment and materials needed for development do not pose unique transportation challenges. New access roads or improvements may be necessary if new sites are not served by existing roadways, or access routes are not built to support heavy truck traffic up to the Federal limit of 80,000 pounds gross vehicle weight for the National Network (Title 23 Code of Federal Regulations [CFR] Part 658). In addition, a small number of one-time oversized and overweight shipments may be required for larger earthmoving equipment used in site preparation.

The construction of short new road segments for ingress and egress to parking areas is not considered to have secondary maintenance and system management impacts, as the BLM would maintain these road segments to ensure site access for day use. Changes in the level and types of traffic could result in secondary impacts on the County if added sign maintenance or patrol becomes warranted in order to institute restrictions on Swanton Road, Cement Plant Road, or Bonny Doon Road.

User conflicts could potentially occur in areas where there is public non-motorized and motorized use within the same travel ways. It is anticipated that vehicle traffic on roads would increase incrementally over time, and may increase periodically as a result of road closures redirecting traffic to open roadways.

It is possible that portions of roads and trails could be fenced or marked to prohibit public use. Because most access in the planning area is dependent on motor vehicles, the location of travel routes and the potential loss of access to recreation assets is considered a land use conflict.

Traffic Generation

Activities under the range of alternatives may increase traffic on nearby roads. Once operational, the recreation opportunities would generate a substantial amount of weekly and/or daily vehicle trips. The primary impact of concern would be any performance degradation of roadways providing key access to the

parking areas on the Monument. However, the distance of parking areas from major roads will to some extent determine the potential for traffic to change local circulation patterns or degrade local roads and cause congestion problems, especially from RV's and heavy-duty trucks.

An important aspect when considering traffic volume increases over existing conditions is the life cycle of the RMPA. As the availability of recreation opportunities increases, new activities (and any adverse impacts) may occur in addition to existing activities (and any adverse impacts). Therefore, the BLM hired consultants from W-Trans to evaluate traffic operation issues associated with the range of alternatives considered in the Cotoni-Coast Dairies RMPA for public access and recreation opportunities. The focus of this investigation was to determine the extent of improvements needed at the various access alternative sites as well as to discuss potential traffic congestion due to the project. They examined trip generation of the proposed project alternatives, and provided an assessment of traffic facility needs as a result of the additional traffic expected to be generated by the project. Refer to **Appendix K** for the Final Traffic Study for the Cotoni-Coast Dairies Project, prepared by W-Trans (Weinberger 2020).

Existing Mitigation Strategies

The primary management strategy is that public vehicle use on all BLM lands would be "limited" to designated routes, except as noted. Existing BLM standards regarding road design, construction, and maintenance are described in BLM Manual 9113. An access road siting and management plan should be prepared incorporating these standards, as appropriate. Generally, roads should be required to follow natural contours; be constructed in accordance with standards described in BLM Manual 9113; and be reclaimed to BLM standards. As described in BLM Manual 9113, BLM roads should be designed to appropriate standards no higher than necessary to accommodate their intended function.

4.12.3 Impacts of Alternative A, B, and C

W-Trans calculated vehicle trip information was determined based on data from the RMPA and ITE Trip Generation Manual. It is estimated that during the weekday p.m. peak hour Alternatives A, B, and C would respectively generate 16, 31, and 44 trips. For the weekend midday peak hour, this would be 40, 80, and 111 trips, respectively (Weinberger 2020) (**Appendix K**).

These volumes were added to existing volumes for each location on Highway 1 where an intersecting road or driveway would carry project traffic for each of the three alternatives. It was found that left-turn lanes, right-turn lanes, and right-turn tapers would not be warranted for any of the alternatives under volumes resulting from adding project trips to existing volumes.

Future volumes were determined using the anticipated growth rate to 2040 from the AMBAG RTDM. Under these future volumes, turn lanes and tapers would continue to not be warranted for the study intersections. However, a northbound left-turn lane would be warranted for Highway 1/Panther Beach Parking Access with the addition of Alternative B or C traffic to the future volumes. It is noted that the Panther Beach parking area uniquely would be on the west side of Highway 1, whereas the other study parking areas would be on the east side (**Appendix K**).

The peak hour traffic signal warrant was assessed for volumes at Highway 1/Bonny Doon Road as Bonny Doon Road has the highest traffic volume of any road intersecting Highway 1 that would carry project traffic. With the addition of the maximum expected traffic generated by the project at any of the access locations, a traffic signal would not be warranted for existing volumes with the addition of Alternative A traffic. It was found that a signal would be warranted for this location under future volumes without or with the addition of Alternative A traffic(**Appendix K**) .

Sight distance was assessed for each proposed parking area driveway and where public roadways that would be used by project traffic intersect with Highway 1, except for the Warrenella Road Top parking area as it was inaccessible at the time of this study. All locations have adequate sight distance in both directions, except the Liddell Creek parking area on Bonny Doon Road. For this location, it is recommended that the parking lot connection be moved or that vegetation be cleared such that sufficient sight distance is achieved (**Appendix K**). This only affects Alternative A, as Alternatives B and C do not include a parking area at Liddell Creek.

4.12.4 Impacts of Alternatives D (Preferred Alternative)

The impacts of the preferred alternative would be similar to those described above for other action alternatives because the BLM anticipates similar levels of visitor use and demands for parking under Alternative D that are described for Alternatives B and C in **Appendix G**.

The BLM proposes to improve existing transportation infrastructure to ensure sustainable management and visitor use and enjoyment in RMZ 1 and RMZ 3. For example, the Warrenella Road is approximately 2.65 miles long. Segment A, which begins at the intersection with Cement Plant Road, is 1.83 miles long, 24-foot wide with a paved surface. Segment B is 0.82 miles long, 12-foot wide with a native, unpaved surface. The proposed improvements are limited to work within Road Segment A. The pavement of Road Segment A is in poor condition with large sections of missing and broken pavement, potholes, and severe alligator cracking. Most of the ditches, culverts and drainage features within Road Segment A are in poor condition. The direct impacts of the BLM's management includes temporary adverse impacts to through traffic from the removal of remaining pavement to prepare and compact subgrade. On the other hand, there would be long-term beneficial impacts from adding graded aggregate base (GAB), hot mix asphalt (HMA), and drainage system improvements along Warrenella Road. These include regrading and cleaning ditch lines, repairing /improving erosion control features and riprap outlet structures, and replacing sixteen 18"-24" CMP culverts with HDPE culverts. Additional PDF's include line striping, road signage, gates, and fencing both sides of Warrenella Road to reduce negative impacts of upgrades to Warrenella Road.

Under the preferred alternative, the BLM also proposes to upgrade an existing agricultural road to provide public access to parking facilities and recreational trails in RMZ 3. The proposed Marina Ranch Road project entrance connection is within State right-of-way and will require approval from CalTrans. Culvert installation (36" RCP) under HWY 1 is included in this project. The direct impacts of the BLM's management includes temporary adverse impacts to through traffic from the construction of acceleration and deceleration lanes on Highway 1 that would be mitigated through PDF's established by CALTRANS to meet public safety standards during highway construction periods.

Additional minor adverse short-term impacts would result from the construction of new trailhead facilities at Warrenella Road Gate, Warrenella Road Top, and Marina Ranch Gate. In order to mitigate the likely effects of future vehicle use, these parking facilities would be designed to include aggregate-surfaced parking lot and access roads, concrete vault toilets, animal resistant waste receptacles, picnic shelters, kiosks, signage, fencing, and gates that would be closed at night.

4.13 Lands and Realty

4.13.1 Introduction

Land tenure adjustments and land use authorizations are BLM activities that may occur for all alternatives. Alternative A represents the “No Action” alternative required by NEPA and would continue the current management under the CCONM RMP (BLM 2005a) and the IMP (BLM 2014). All alternatives would recognize all third party acquired easements, existing land use authorizations and rights of ways on C-CD.

Management actions authorized through the lands and realty program require subsequent analysis at the project level to determine site-specific resources issues and alternatives for implementation. Therefore, the Land and Realty program would not result in any direct environmental impacts to the human environment under any alternatives. Other programs and resources would be affected by failure to complete the required resources screening and analysis prior to any land use authorization.

4.13.2 Impacts Common to All Alternatives

Authorizations and permits would specify site specific mitigation measures to reduce or eliminate potential impacts to air quality, soil, water, biological, recreation, visual, rangeland, energy and minerals, cultural, paleontological, social/economic, transportation/access, hazardous materials, and public safety resources.

For all alternatives, the potential for acquisition of lands or easements from willing sellers would assure more efficient management of public lands and greater preservation and enhancement of C-CD objectives and values in important areas.

All existing third-party rights would continue to be managed in accordance with the rights that were granted.

4.13.3 Impacts of Alternative A (No Action)

Under the no action alternative, existing management actions would have a minor adverse impact on administration of lands and realty because they would only allow acquisition of lands for efficient management of public lands and to reduce conflicts with other public and private landowners within C-CD. Land tenure adjustments would be implemented if the FLPMA and other applicable Federal laws and regulations are met, and if the BLM management objectives for the management area, such as impacts or loss to species/habitats or other resource impacts, are not compromised.

Management of resources would be maintained at current levels. This alternative would not modify allowable uses to address emerging issues on public lands.

Impacts from new activities, expanded rights-of-way (ROWs), or construction of utility sites and related facilities outside of designated or established corridors would vary depending on the approval of applications with appropriate mitigation measures. Similarly, allowable impacts from permit applications for commercial filming, or other uses would be considered on a case-by-case basis to determine if they are consistent with protection of C-CD objectives and values. Rehabilitation of roads not required for administrative purposes and resolution of unauthorized uses of public lands would have long-term beneficial impacts on other resources.

4.13.4 Impacts Common to Alternatives B, C and D

Land Acquisition/Exchanges

Under all the alternatives, the BLM would only consider acquisition or exchange of private property and other lands from willing sellers with a focus on lands within the boundary of the C-CD. The Presidential Proclamation directs the BLM to consider acquiring these lands to protect the resources for which the monument was designated, but there are only a few small private inholdings, so the impacts of transferring these lands into public ownership would be negligible. Furthermore, acquired lands within the boundary of the C-CD would be subject to the deed restrictions and they would become part of the CCNM and subject to the decisions in this RMPA.

In rare instances, the BLM may consider acquisition of neighboring lands, or easements, from willing sellers that support C-CD objects and values or provide opportunities for public access to C-CD, consistent with resource management goals and objectives. However, lands acquired outside of the C-CD boundary would not become part of the CCNM and they would not be subject to this RMPA.

Under the Proposed Plan, public access easements would need to be acquired for Warrenella road top and Marina Ranch gate. Therefore, the BLM entered into an agreement with the Trust for Public Lands (TPL) on June 3, 2020 to grant two 45-foot roadway easements (to accommodate the roadway, drainage and fencing) along existing easements are currently for administrative use and do not allow for public access. By acquiring these easements there would be moderate long-term benefits for management efficiency and improved access to public lands.

One of the public easements would grant public access over the lower portion of Warrenella Road for managed public access, all in a manner consistent with the purpose and terms of the Conservation Easement, and the existing deed restrictions for the C-CD property.

The other roadway easement would grant public access over the agricultural parcel in the Marina Ranch Road area, all in a manner consistent with the purpose and terms of the Conservation Easement, and the existing deed restrictions.

The BLM's agreement with TPL includes efforts to identify appropriate management and maintenance requirements and conditions designed to protect the landowner's rights, obligations and agricultural interests relating to the Warrenella Road area and Marina Ranch Road area. Therefore, the long-term (minor) adverse effects on existing rights holders and adjacent lands from establishing public easements onto C-CD would be mitigated.

According to the BLM's agreement with TPL, the BLM's responsibility includes improving and expanding the existing roadways in the Warrenella Road area and Marina Ranch Road area. Additional details include the following general understandings:

- (a) BLM will prepare all surveys, easement descriptions, secure permits, design, construct and maintain improved and expanded roadways in the Warrenella Access Area and Marina Ranch Gate Access Area;
- (b) Fencing, gates, etc. will separate agricultural uses from public use.
- (c) The Warrenella Access Area and the Marina Ranch Gate Access Area are not to be used to support new or augmented residential or commercial uses, but the Warrenella Access Area may be used to support the existing level of residential and commercial activity.
- (d) Roadways within the Warrenella Access Area and Marina Ranch Gate Access Area shall be

designed and maintained to reasonably minimize impacts to the agricultural and other uses of the Ag Parcels and the rural character of the area, and may, with the agreement of the Parties, be designed and engineered in compliance with BLM standard road specifications.

(e) Easements describing the Warrenella Access Area and Marina Ranch Gate Access Area will be prepared and recorded to grant public access with new legal descriptions showing the 45 foot width, which will include and fully contain the roadway, drainage and fencing, and related management needs.

Land Use Authorizations

Impacts from new activities, expanded rights-of-way (ROWs), or construction of utility sites and related facilities outside of designated or established corridors would vary depending on the approval of applications with appropriate mitigation measures. Provisions for new facilities require them to be built to applicable standards as determined by the BLM authorized officer. BMPs and other measures will be implemented to avoid adverse effects on natural resources and the human environment. Any new facilities with potential for adverse effects will be subject to additional environmental review under NEPA. Similarly, applications for use of CCNM lands will be considered on a case-by-case basis, considering the potential for the use to affect CCNM resources and the consistency of the use with the goals and objectives of this RMPA. Commercial filming, search-and-rescue operations, or other uses would be allowed on a case-by-case basis with appropriate mitigation measures. Prohibited uses outlined in Chapter 2, closing and rehabilitation of roads not required for administrative purposes, and resolution of unauthorized uses of public lands would have major long-term indirect beneficial impacts on other resources.

Nonetheless, allowing public access to the Warrenella Road top would increase potential risk to Pacific Gas and Electric who have a substation on a small 0.011-acre inholding parcel. The parcel is currently not fenced, so public access could result in moderate adverse short-term effects from vandalism. Public use of Warrenella Road would also result in moderate long-term adverse impacts on other existing rights holders due to the increased seasonal traffic. These adverse impacts would be mitigated by establishing seasonal restrictions and controlled public access to Warrenella Road Top and by requiring fees to park at C-CD, which will allow for increased monitoring and patrol of this area.

4.14 Social and Economic Conditions

4.14.1 Introduction

This section presents an analysis of social and economic impacts of the management alternatives considered in this RMPA/EA. This analysis discusses potential effects to existing social patterns, employment, labor income, and important sectors in Santa Cruz County, with an emphasis on the North Coast. Environmental justice impacts to communities within the localized study area are also discussed.

Continued employment patterns can be seen as a benefit to the local community. Other economic benefits are also present, although some are not easily measured or tied to economic activity. Examples of where effects are difficult to quantify are equity effects, impacts to social values, and non-market values.

In order to accurately portray the relationship of current BLM management and the community, the scope of analysis for social and economic effects from changes on C-CD extends beyond the immediate vicinity of the BLM-administered lands. Therefore, the local study area includes small towns like Davenport and Bonny Doon as well as the City of Santa Cruz. Environmental justice impacts are evaluated by identifying populations, communities or groups that contain a high number of minority or low-income populations that could be subject to disproportionate adverse effects of BLM management actions identified for RMPA alternatives. Analysis of the effects of herbicide application on Social and Economic Values is analyzed in the Weed Management Plan (**Appendix F**). An approved Pesticide Use Proposal (PUP) is required before herbicide application can be conducted at C-CD.

4.14.2 Impacts Common to All Alternatives

The RMPA is not expected to create a significant number of new jobs or induce population growth. Changes in employment patterns within a community can have a direct and indirect effect on many social conditions. It is possible some specialized workers could come from outside the regional and local study areas. However, these workers are expected to seek lodging proximate to the work areas, which is assumed to be local study area communities where social values and structure is already influenced by the recreation and tourism industry. Therefore, the presence of temporary workers is not expected to disrupt existing social conditions or values of the adjacent communities of the North Coast. While some groups or residents in these communities likely would consider new recreation developments to diminish quality of life, the North Coast is already a recreation destination for beach access, State Parks and auto tours, among other activities. Therefore, this adverse impact is considered to be minor. In addition, this adverse impact is outweighed by the beneficial social effects of greater access to public trails for exercise and relaxation.

In addition to direct jobs associated with RMPA implementation, future economic activity would support other secondary jobs established in the local communities. These jobs result from indirect economic effects of tourism activity (purchases of goods and services by visitors).

Introduction of public access and recreation at C-CD could have an adverse social impact on the community by increasing public service calls related to search-and rescue, wildfire, and law enforcement. However, these impacts are anticipated to be minor due to the increased presence of BLM staff and partners on the property. The BLM has, and continues to, partner with CalFire, Santa Cruz County and others to address public safety concerns related to C-CD.

Non-market Values

Non-market values are associated with several of the resources managed by the BLM in the planning area, as well as with recreation and open space on both public and private lands. Non-market values include the benefits received by people from participating in recreational/tourist activities and the overall high-value visual context of these lands throughout the planning area. Additionally, individuals derive passive or non-use benefits from the existence of abundant wildlife, waterways, scenic resources, and extensive agricultural lands with little development and other amenities in many areas within the planning area. Both

tourism and recreation have market components individually, which are heavily affected by BLM land use decisions.

Environmental Justice Effects

In analyzing potential environmental justice impacts, the U.S. Census data for minority and low-income populations was used. For this analysis, a population is considered a potential environmental justice population if the percentage of the minority or low-income population of the potentially affected area is significantly greater than the corresponding percentage of the population in the larger jurisdiction or region in which it is located.

The major consideration is whether any adverse impacts from the range of alternatives would be borne disproportionately by these communities when compared to the general population of the region. An important aspect when considering disproportionate effects within these communities over existing conditions is the life cycle of the RMPA. As the availability of recreation opportunities increases, new activities (and any adverse impacts) may occur in addition to existing activities (and any adverse impacts).

4.14.3 Impacts of Alternative A (No Action)

Recreation

The no action alternative would have less direct impacts on social and economic conditions than the action alternatives because it would result in the fewest new recreation opportunities and lowest annual visitor use estimates. The indirect negative impacts of current management on social values and non-market values would be greater than other alternatives because it precludes the opportunity to establish regional trail connections for mountain bike and horseback riding in the region.

While the limited number of trail and trailheads under Alternative A will limit the number of expected visitors to C-CD, the placement of these trail and trailheads in less visible/more remote locations could result in an increase in illegal activities and law enforcement calls related to C-CD.

Transportation and Travel Management

The no action alternative would have less direct impacts on social and economic conditions than the action alternatives because it would result in the fewest new parking areas and lowest new vehicle trip estimates. The indirect impacts of current management would be similar to other alternatives because the BLM anticipates up to 40 vehicle spaces would accommodate the demand for visitor use under Alternative A.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The no action alternative would have less direct impacts on social and economic conditions than the action alternatives because it would result in the fewest changes to existing uses, including livestock grazing. The indirect negative impacts of current management on social values and non-market values would be greater than other alternatives because it precludes the opportunity to establish effective programs to prevent or control the spread of non-native plants using herbicides or prescribed fire.

Special Management Areas

Recommendation to release all eligible river segments from further consideration under the Wild and Scenic Rivers Act would have no effect on social and economic resources.

4.14.4 Impacts of Alternative B

Recreation

This alternative would have more direct impacts on social and economic conditions than the no action alternative because it would result in new recreation opportunities and higher annual visitor use at C-CD. The indirect beneficial impacts of the RMPA on social values and non-market values would also be greater

than the no action alternative because it increases the likelihood that visitors would utilize the regional trail system for mountain bike and horseback riding opportunities in the region. The direct and indirect impacts of Alternative B are less than Alternative C.

While the number of trail and trailheads under Alternative B are greater than Alternative A, the placement of proposed parking areas in more exposed/visible locations and the increase in anticipated users may result in less illegal activities and law enforcement calls than under Alternative A. Due to increased number of visitors compared to Alternative A, risk of wildfires is higher under Alternative B. This would be mitigated through implementation of fuels treatments, public education/outreach, and appropriate trail maintenance.

Transportation and Travel Management

Alternative B would have more direct impacts on social and economic conditions than the no action alternative because it would result in more new parking areas and more new vehicle trips. The indirect impacts of Alternative B would be similar to other alternatives because the BLM anticipates up to 78 vehicle spaces would accommodate the demand for visitor use under Alternative B.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The direct impacts of this alternative are expected to be similar to the no action alternatives because it would only result in minor changes to existing uses, including livestock grazing. The impacts of vegetation management actions on social values and non-market values would have long-term beneficial effects on social and economic conditions because the BLM's goals and objectives are to establish effective programs to prevent or control the spread of non-native plants and reduce the risk of wildfire.

Special Management Areas

The BLM's recommendation to designate eligible wild and scenic rivers would have no direct impacts on C-CD. However, there would be indirect beneficial effects on social and economic resources as a result of wild and scenic river designation.

4.14.5 Impacts of Alternative C

Recreation

Alternative C would have more direct impacts on social and economic conditions than the Alternative B and current management because it would result in the most new recreation opportunities and highest annual visitor use at C-CD. The indirect beneficial impacts of the RMPA on social values and non-market values would also be greater than the other alternatives because it increases the likelihood that visitors would utilize the entire C-CD trail system for mountain bike and horseback riding opportunities in the region.

Impacts of Alternative C on public safety are similar to those described for Alternative B.

Transportation and Travel Management

Alternative C would have more direct impacts on social and economic conditions than current management and/or Alternative B because it would result in the most new parking areas and the most new vehicle trips. The indirect impacts of Alternative C would be similar to other alternatives because the BLM anticipates up to 124 vehicle spaces would accommodate the demand for visitor use under Alternative B.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The direct impacts of this alternative are expected to be greater than Alternative A and Alternative B because it would result in more changes to existing uses, including livestock grazing. The potential for beneficial impacts of vegetation management actions on social values and non-market values would be lower than other alternatives because this alternative includes more intensive herbicide use to prevent or

control the spread of non-native plants, including aerial treatments that raised many concerns during the public comment period on the Draft RMPA.

Special Management Areas

The BLM's recommendation to designate eligible wild and scenic rivers would have no direct impacts on C-CD. However, there would be more indirect beneficial effects on social and economic resources as a result of more segments included in the wild and scenic river designation.

4.14.6 Impacts of Alternative D (Preferred Alternative)

Recreation

Alternative D would have more adverse impacts on social and economic conditions than Alternative A (current management) because it would result in new recreation opportunities and increase annual visitors to the North Coast of Santa Cruz County. However, this region frequently experiences congestion at popular recreation destinations, so Alternative D would also have more long-term beneficial impacts on social and economic conditions than Alternative A (current management) by spreading this visitation out across a greater number of areas and trails.

Alternative D would have less impacts on social and economic conditions than Alternative C because there are fewer allowable uses under this alternative resulting in less visitor use at C-CD and less revenue from sales of good and services in the local area. The beneficial impacts of the RMPA on social values and non-market values would be similar to Alternative B because it increases the likelihood that visitors would utilize the C-CD trail system for mountain bike and horseback riding opportunities in the region.

Transportation and Travel Management

Alternative D would have more impacts on social and economic conditions than current management and/or Alternative B because it would result in more vehicle trips. The impacts of Alternative C would be similar to other alternatives because the BLM anticipates up to 167 vehicle spaces would accommodate the demand for visitor use under Alternative D.

Vegetation Management, including Livestock Grazing, Herbicide Use, and Fire

The impacts of this alternative are not expected to be greater than Alternative B because it would result in similar changes to existing uses, including livestock grazing. The impacts of vegetation management actions on social values and non-market values would also be similar to other alternatives because the BLM's goals and objectives are to establish effective programs to reduce the risk of wildfire, and control the spread of non-native plants using livestock grazing, targeted herbicide use, and prescribed fire.

Special Management Areas

The BLM's recommendation to designate suitable wild and scenic rivers would have beneficial effects on social and economic resources as a result of the elevated stature associated with the system.

4.15 Cumulative Effects

Introduction

The Council on Environmental Quality (CEQ) defines cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). The CEQ suggests cumulative impact analyses should focus on meaningful impacts, and not exhaustively analyze all possible cumulative impacts (CEQ, 1997). Therefore, the analysis in this RMPA and EA focuses on past, present, and future actions that are anticipated to have environmental impacts similar to or impacting the same resources as the direct and indirect impacts identified for each of the alternatives. Cumulative projects include those actions that result in meaningful impacts to historically important resources, those with a potential for violating legal standards or laws, or other identified projects or actions in the geographic scope that relate to the identified issues. Cumulative impacts will be analyzed only for those resources that have identified direct or indirect impacts.

Geographic Scope

The geographic scope for the cumulative effects analysis is focused within the boundaries of the County of Santa Cruz. The specific geographic scope for different resources varies due to the nature and extent of the impacted area; but the accumulation of the effects being assessed is expected to remain within this geographic area.

Timeframe

The timeframe of past, present, and reasonably foreseeable future projects was determined as follows:

- **Past and Present Development.** Existing development reflects the cumulative baseline or existing conditions described in the affected environment in Chapter 3;
- **Visitor Use and Parking Estimate.** An estimate of the level and type of future visitor use in the C-CD planning area (**Appendix G**);
- **Regional Transportation.** Future traffic volumes were determined using the anticipated growth rate to 2040 from the AMBAG RTDM. Refer to for the Final Traffic Study for the Cotoni-Coast Dairies Project (**Appendix K**).
- **Regional Conservation Lands.** Includes other relevant projects that have either: submitted permit applications, begun the environmental review process, been approved, or are under construction within the geographic scope.
- **CZU Lightning Complex.** The USGS emergency assessment characterizes potential debris-flow hazards at a static point in time immediately following wildfire. Studies of post-fire debris flow in the western United States have indicated that debris-flow activity in recently burned areas typically occurs within 2 years of wildland fire.

Incomplete or Unavailable Information

Impacts are quantified where possible. Impacts are sometimes described using ranges of potential impacts or in qualitative terms. In the absence of quantitative data, impacts are described based on the professional judgment of the interdisciplinary team of technical specialists using the best available information. Impacts analysis based on incomplete or unavailable information is identified where applicable.

Assumptions

Several general assumptions were made to facilitate the analysis of potential impacts. The assumptions listed below are common to all resources. Other assumptions specific to a particular resource are listed under that resource above.

- Public land management presents environmental, health, and safety impacts independent of the history of land use where it takes place.
- The degree of environmental impacts varies depending on whether it occurs in proximity to other existing uses versus a greenfield location, or if the surrounding area is residential, agricultural, or undeveloped.
- Numerous resources are influenced by regional development that are not within the BLM's decision making authority. These include the appropriation and use of the local groundwater, availability of surface water, local air quality, growth of human population centers, and other private property rights.
- As vegetation cover and soil properties return to pre-fire conditions, the threat of debris-flow activity decreases with time elapsed since wildfire. Conversely, the hazards from flash-flooding may persist for several years after the wildfire.

Incorporation by Reference

The BLM's analysis of cumulative effects in this Proposed RMPA/EA is based primarily on A Conservation Blueprint: An Assessment and Recommendations from the Land Trust of Santa Cruz County (Mackenzie et al., 2011). The Conservation Blueprint is a science-based and community-informed document that compiled existing data, plans, expert opinion and input from the public from 2008 -2011. The Conservation Blueprint provides a comprehensive discussion of biodiversity, water, agricultural and recreational resources in the County (Mackenzie et al. 2011). The Blueprint was developed over 18 months with the support of the Gordon and Betty Moore Foundation, the Resources Legacy Fund, and Land Trust members. Their work was guided by a seven-member Steering Committee and drew on the knowledge of 110 experts within the area and community forums held to solicit public input, with funding provided by the Community Foundation Santa Cruz County.

Other sources include references used to prepare the BLM's Visitor Use and Parking Estimate (**Appendix G**), including PlaceWorks memorandum addressing future visitor use at the San Vicente Redwoods property (Minn and Fleischmann, 2016), and the North Coast Rail Trail EIR (SCCRTC, 2019). Due to their proximity and the potential for trail connectivity between these projects and C-CD, the annual visitor estimates for the San Vicente Redwoods Access Plan and vehicle trip assumptions for the North Coast Rail Trail are relevant to evaluating the incremental impacts to the environment of increasing access to recreation opportunities and regional trail connectivity in the C-CD, and allows BLM to make a reasoned choice among the range of alternatives considered in the Draft RMPA/EA.

Additional new information incorporated into the plan is based on the United State Geological Survey (USGS) conducted a post-fire debris-flow hazard assessment for the CZU Lightning Complex that is available on-line (USGS website, accessed on September 17, 2020), and Lockheed Fire Post Fire Risk Assessment released by the San Mateo-Santa Cruz Unit of California Department of Forestry and Fire Protection on September 30, 2009.

The constraints of these references include areas of uncertainty within the assessments and other incomplete or unavailable information that inherently affect BLM's evaluation of reasonably foreseeable effects on the human environment from introducing new public recreation opportunities on the C-CD. In particular, the BLM was unable to quantify risks to transportation, emergency services, public health, or safety, from implementation of the range of alternatives because there is no reliable data on visitor use for C-CD due to the fact that the property has not been previously open to public use. Nonetheless, the BLM hired consultants from WTrans to provide forecasts of future traffic volumes using the anticipated growth rate to

2040 from the AMBAG RTDM. Refer to for the Final Traffic Study for the Cotoni-Coast Dairies Project (**Appendix K**). Therefore, BLM's evaluation of such impacts is based upon theoretical approaches or research methods discussed in **Appendix G** and **Appendix K**.

Monitoring the effects of introducing new recreation opportunities in C-CD will allow the BLM to periodically review and summarize what has been observed to determine if adaptive management is needed. Additional information is identified in the BLM's Monitoring Plans in **Appendix C**, which provides further monitoring direction for the C-CD.

For the purposes of analyzing risk to public health and/or emergencies, BLM shall incorporate by reference the definition of "reasonably foreseeable" from 40 CFR 1502.22(b)(4). As such, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

Environmental review documents associated with the cumulative projects listed in **Table 4.15-1** and **Table 4.15-2** are incorporated by reference into this impact analysis, as feasible. Nonetheless, many of the projects listed are in varying stages of development so details are incomplete or unavailable regarding the final impacts on resources in the planning area.

Past and Present Development

The history of development on the C-CD is low compared to private lands in the region. In the last two decades, there's been no major new developments with the exception of the closure and remediation of quarries and associated infrastructure by CEMEX. Assuming that the population growth trend in this region is likely to continue for the next 10 years, Santa Cruz County could see up to 25,000 additional residents in rural and urban locations during the life of this plan. The impacts of population growth are unavoidable.

The Conservation Blueprint (Mackenzie et al. 2011) describes the regional setting as follows:

Santa Cruz County is the second smallest county in California, containing a total of 441 square miles or approximately 285,000 acres. It features diverse natural and cultural resources, varied topography and landscapes, including the forested Santa Cruz Mountains, the Mid County coastal terraces, and the alluvial plains of South County.

The mountainous county includes 18 principal watersheds, all of which drain into the Monterey Bay National Marine Sanctuary. The San Lorenzo River encompasses 138 square miles and is the largest watershed lying completely within the county. The Pajaro River Watershed includes the Watsonville Sloughs, one of the largest remaining coastal wetland ecosystems in California, and critically important for migratory and wetland birds, and special status species such as the California red-legged frog and Western pond turtle.

Rivers and streams that originate in the upper watersheds of the county's forested lands as well as coastal streams totaling 850 miles provide drinking water to over 190,000 residents in and around the City of Santa Cruz and support steelhead and coho salmon. Santa Cruz County features a high concentration of the Central California Coast's important aquatic ecosystems, including coastal streams, sloughs, wetlands, ponds, and lakes that support a diversity of wildlife. Santa Cruz County is considered a global hotspot for biodiversity for its abundance of native plants, including 1,200 native plant species and 17 endemic species found nowhere else in the world. The county includes diverse natural communities, from the globally rare old-growth redwood forests and Santa Cruz sandhills, to the northern maritime chaparral, and coastal prairie grasslands.

The county also supports a diversity of animal species including more than 350 bird species and 11 endemic animals. Santa Cruz County also plays a critical role in regional landscape connectivity,

specifically, providing wildlife linkages between the Santa Cruz Mountains and the Gabilan Range to the south and the Diablo Range to the east.

Santa Cruz County has an extensive network of protected lands, which includes public parks, trails, open space and beaches with about 45,000 acres in the State Parks system, 7,000 acres within county and city parks, over 231 miles of trails, including the California Coastal Trail and Bay Area Ridge Trail, and 12 nature centers. In annual surveys conducted for the Community Assessment Project, residents consistently and overwhelmingly identify the county's scenery, geography, and climate as the factors that contribute most to their quality of life (CAP 2010). Approximately 78,000 acres or 27% of the county is protected in parks, public land or through conservation easements. This compares to 39% in protected status in San Mateo County and 29% in Santa Clara County, respectively (**Appendix D**). Approximately 31,700 acres or 11% of the county is urban or built up land, and 110,000 acres or 39% of the county is in agricultural use, including cultivated farmland, rangeland, and timberland.

Table 4.15-1. Comparable Lands in the County of Santa Cruz

Name/Size	Description	Distance from Santa Cruz	Annual Visitor Use; and Parking Capacity
Wilder Ranch State Park 7,000 acres	34 miles of trails for hiking, biking, equestrian, events, camping, and education	2 miles	472,809; 237
San Vicente Redwoods* 8,500 acres	38 miles of trails for hiking, biking, and equestrian	15 miles	83,220; 40-60
The Forest of Nisene Marks State Park 10,257 acres	30 miles of trails for hiking, biking, camping	11 miles	102,094; 75
Soquel Demonstration State Forest 2,681 acres	24 miles of trails for hiking, biking, and events	22 miles	20,000; 60

*not currently accessible

Sources: Minn and Fleischmann, 2016.

Reasonably Foreseeable Future Actions

Table 4.15-2 lists regional conservation and recreational activities that have been identified within the geographic scope. The BLM does not include estimates for the total number of miles or acres that are expected to be developed because they are considered part of the environmental baseline for the RMPA/EA. Nonetheless, the average number of recreational trails and environmental resources in the County of Santa Cruz are summarized below for consideration of cumulative effects of the range of alternatives in BLM's Draft RMPA/EA.

Santa Cruz County recently completed a planning process for the Davenport Cement Plant. While this project is a relevant potential future action, implementation of the CEMEX Reuse Plan is not reasonably foreseeable within the life of this RMPA. Therefore, this plan was not incorporated into the Cumulative Impacts analysis.

Table 4.15-2. Cumulative Projects

Project Name	Description	Location	Status
North Coast Rail Trail	7.5 miles of trail for hiking, biking	Santa Cruz Branch Line	On-going
San Vicente Redwood Access Plan	38 miles of trail for hiking, biking, equestrian	Bonny Doon	On-going

The Conservation Blueprint says the extensive network of regional conservation lands in the Santa Cruz Mountains and along the coast provide many opportunities to complete trail projects that are of national, statewide, or regional significance (Mackenzie et al. 2011). In particular, they identified the Santa Cruz Regional Transportation Commission's vision for the North Coast Rail Trail (NCRT) to Davenport as an opportunity to connect with the California Coastal Trail, and expectations that there would be outstanding new opportunities for public access and appreciation of C-CD.

As described on the Santa Cruz Regional Transportation Commission's website:

The NCRT project is a 7.5-mile multi-use bicycle and pedestrian trail proposed to extend along the railroad corridor from Wilder Ranch State Park in the south to Davenport in the north in unincorporated Santa Cruz County. The project also includes improvements to three existing parking areas (Davenport Beach, Bonny Doon Beach, and Panther/Yellow Bank Beach) as well as a new crossing of Highway 1 in Davenport. The 5.4-mile section from Wilder Ranch to Panther/Yellow Bank Beach is scheduled for construction in 2021. Construction funding is yet to be secured for construction of the remaining 2.1 miles to Davenport, as well as the 3 parking lot improvements and crossing of Highway 1 in Davenport.

The Conservation Blueprint cites a 2003 assessment by the State Coastal Conservancy that found 40% of the California Coastal Trail had been completed statewide. At the time, approximately seven miles, or 16% of Santa Cruz County's 43-mile long coastline had been established. Upon completion of the NCRT, the portion of the California Coastal Trail complete within the County would rise to nearly 33%.

The PlaceWorks memorandum (Minn and Fleischmann 2016) also explains the C-CD property borders the San Vicente Redwoods (SVR) property and they are connected by Warrenella Road. While the C-CD and the SVR properties are not currently open for public access, the deed restrictions for both properties state that they will provide public access. As a result, there has been extensive collaboration with the partners because BLM and the Land Trust of Santa Cruz County anticipate these parallel planning efforts will elevate the visibility and status of the C-CD.

Biological Resources

The geographic scope for analysis of cumulative effects on biological resources is the planning area. The analytic assumptions are that other Federal and State agencies with a stake in the planning area will continue to implement their current plans as written. It is further assumed that private lands within the planning area would continue to exhibit the same overall spatial pattern and trends of vegetation, habitat, and disturbance over time as presently exists.

Biological resources are primarily subject to degradation from human activities, including surface disturbance. Historically, the C-CD has been subject to human disturbances that have resulted from agriculture, grazing, residential development, and industrial use. These trends in disturbance are expected to continue accumulating a net loss of these resources.

Cumulatively, these historic trends of adverse impacts result from private, local, State, and Federal actions within the planning area. To counter these adverse impacts, agencies with a preservation or protection mandate, such as BLM, plan for and implement actions to alleviate these trends (e.g., restoration and recovery projects). The actions provided for by the BLM through this RMPA add to the protections of biological resources through the support, compliance with, and enhancement of these efforts. However, there is a limited amount of land within the planning area under BLM management.

Cumulative impacts directly relate to the management of the biological resources in the planning area. Chapter 3 discusses the BLM's current management of livestock grazing, wildland fire and fuels management, recreation, and other activities, and provides a context for cumulative impacts of management actions. Cumulative impacts as a result of the range of alternatives considered under the RMPA are expected to be negligible.

Site-specific analysis and implementation of PDFs presented in **Appendix D** would reduce impacts and minimize the incremental contribution to cumulative effects from the RMPA.

Generally, the context and intensity of non-BLM activities are not anticipated to vary by alternative because these activities do not directly depend on BLM management actions and allowable uses set forth in the RMPA alternatives. Much of the BLM management in these alternatives is designed to protect and preserve biological resources. However, there is a very limited amount of land within the Planning Area under BLM management. Therefore, BLM management makes a relatively small contribution to cumulative effects, both adverse and beneficial, throughout the planning area.

Overall, each alternative would contribute incrementally to cumulative impacts. The net cumulative effect of the range of alternatives considered in the C-CD RMPA would have minor beneficial effects on biological resources. Information regarding the geographic scope and other assumptions for biological resources also apply to special status species.

Potential impacts to special status species from the RMPA, as well as other current and probable future projects on regional conservation lands in the planning area would contribute to beneficial cumulative impacts to special status species.

The introduction of recreational uses on C-CD could have an adverse cumulative impact on wildlife when considered in combination with proposed access in the San Vicente Redwoods Plan. Introduction of public use on both properties could have impacts on wildlife movement and activity. This impact would be greatest under Alternative C, followed by Alternatives B and D, with the least impacts anticipated under Alternative A. However, this impact will be mitigated because of minimization measures included in the RMPA and through coordinated management and enforcement across BLM and neighboring properties.

Under Alternatives B and D, the BLM would manage a large portion of C-CD as core fish and wildlife emphasis areas. The San Vicente Redwoods Plan, which provides for public access on their adjacent property, sets aside reserves for fish and wildlife that are contiguous with the proposed areas on C-CD under Alternatives B and D. These actions in combination are anticipated to have a permanent beneficial effect on fish and wildlife.

The San Vicente Redwoods plan also sets extensive goals for watershed and forest restoration. The restoration objectives and actions proposed under Alternatives B, C, and D would also result in a cumulative beneficial effect for biological resources across the region.

Based on the USGS emergency assessment of debris flow hazards following the CZU Lightning Complex, and information in CalFire's 2009 assessment of the Lockheed Fire, bridges, culverts, and other watercourse crossings will likely be impacted by sediment laden floods and debris flows near the downslope southwest fire perimeter.

In particular, the majority of the 19,000-acre Scotts Creek watershed burned, as well as a substantial portion of the 1,025-acre Molino Creek watershed and the 6,961-acre San Vicente Creek watershed. It is anticipated that flooding and sedimentation are likely to occur in these drainages during heavy winter and spring rains. The resulting downstream sedimentation and flooding may impact infrastructure (for example agricultural systems, seepage systems, pumps, water lines, roads, watercourse crossings).

The CZU Lightning Complex is anticipated to have a short-term negative impact on reptiles, terrestrial amphibians (e.g. slender salamanders and yellow-eyed salamanders) and small mammals as individuals of these species were unable to escape the fire. However, the return of vegetation to an earlier successional stage may lead to a short-term increase in some species. Increases in sediment from the CZU Lightning Complex are likely to result in a short-term reduction in successful reproduction for salmonids and a reduction in suitability of some creeks for habitat for California red-legged frogs.

There is an earthen dam on Molino Creek with a culvert that is partially filled with sediment. The earthen dam is the location where a recreational trail system is being considered that would allow visitors to cross Molino Creek and access regional trails connecting to the San Vicente Redwoods property on the north end of RMZ1. According to the 2009 CalFire assessment, the dam “appears to be structurally impaired with evidence of embankment and spillway erosion from past overtopping. The headwaters above the Molino Creek Dam experienced very high, high and moderate burn severity and there appears to be a possibility of increase runoff, flooding, and sedimentation to the Molino Creek reservoir that could result in overtopping during moderate storms. If the Molino Creek Dam were to fail, it would likely lead to flooding and debris flows and sediment concentrated floods that could impact the bridge located downstream on Swanton Road”. If this were to occur, the BLM would delay implementation of this section of trail or implement an emergency closure to protect public health and safety.

Due to the incorporation of Project Design Features into the range of alternatives considered in the RMPA, the BLM’s management activities (including construction of parking areas and trails) are not anticipated to increase sediment loads in C-CD streams. Therefore, the cumulative effect of the RMPA when considered in the context of effects caused by the CZU Lightning Complex is negligible.

Cultural and Heritage Resources

Cumulative effects on archaeological sites, traditional cultural properties, and historic resources are caused by impacts that can occur over a long period of time, resulting in the gradual but permanent loss of archaeological data as well as the diverse cultural history represented by those properties. In this sense, cumulative losses of cultural resources within the C-CD also have the potential to indirectly affect Native American groups and various other populations with a history of settlement and land use in the region. Specific site types that embody this culture history are prehistoric habitation and resource procurement sites, sacred sites, and historic ranching, mining, and agricultural sites. While impacts on historic properties may be reduced by the retrieval of scientific data from archaeological sites or by the recovery of historical data present in built resources (e.g., buildings, structures, landscapes), the cultural heritage represented by these sites is a non-renewable resource whose loss cannot be alleviated and thus constitutes an adverse cumulative impact. Cumulative losses to the cultural heritage of specific groups or populations may also be considered an off-site effect.

While cumulative effects on cultural resources are difficult to predict given the limited data currently available concerning cultural resources in the C-CD, increased or strengthened management programs for the protection and long-term preservation of historic properties will ultimately prevent major negative cumulative effects from occurring. For all of the alternatives, there are possible cumulative effects to pre-historic and historic resources in areas that receive increased visitor use for recreation that is similar to other comparable lands listed in **Table 4.15-1**. These areas will require more intensive management measures by BLM and partners as land use demands rise. These demands could be potential uses for grazing, transportation, recreation, and other approved land use authorizations through time. Additionally, potential

cumulative effects from increased public awareness of cultural resources increase the risk of vandalism or theft. These cumulative impacts cannot easily be measured; but over time, these activities could permanently impact resources, resulting in an irretrievable loss of non-renewable resources and information.

Nonetheless, the cumulative impacts to cultural resources from Alternatives A, B, C, and D would be minor when combined with a total of 45 miles of new trails on adjacent regional conservation lands because the BLM would monitor visitor use and use adaptive management to ensure the protection and long-term preservation of historic properties over the next 15-20 years.

Visual Resource Management

The geographic scope for cumulative visual impacts is limited to land areas within the viewshed of C-CD.

The cumulative effects of changes on BLM-managed lands could degrade the visual quality of the overall landscape in the planning area and could be inconsistent with the objectives of VRM classes designated in the planning area. The degree of impact depends on the visibility of the projects and the VRM classes of the particular BLM-managed areas affected by the projects.

Two cumulative projects listed in **Table 4.15-2** (SVR and NCRT) would occur on private lands not managed by the BLM; but these projects would contribute to landscape changes in the planning area that may adversely affect the visual quality of nearby BLM-managed public lands.

Recreation Resources

Cumulative impacts to the recreation resources and opportunities would result from other projects or activities that combine with the impacts of the RMPA. The geographic scope for cumulative effects to recreation resources is focused within the boundaries of the County of Santa Cruz.

Cumulative projects that may affect the C-CD have been identified in **Tables 4.15-1** and **4.15-2**. Future public access development activities subject to BLM approval would require further project- and site-specific analysis, during which time applicable PDFs, BMPs, and other conditions of approval (COAs) would be identified. With BLM's discretionary review of future proposals, conflicts between reasonably foreseeable actions and other projects on the North Coast of Santa Cruz County would be avoided.

Assuming the development trends in the region continue, cumulative impacts on recreation resources from Alternatives A, B, C, and D would be beneficial because effects on regional trail connectivity from the RMPA would result in outstanding new opportunities for public use and enjoyment in region over the next 15-20 years.

Transportation and Travel Management

The geographic scope for cumulative impacts is generally limited to the northern portion of the County of Santa Cruz. Effects of increased traffic from C-CD visitors would be generally the same for the surrounding communities because they all rely on the regional transportation network to connect with the neighboring cities of Santa Cruz and San Francisco.

Construction of cumulative projects listed in **Table 4.15-2** would generate traffic on roadways and within communities proximate to and serving individual project locations. The greatest number of trips would be expected during construction of large-scale projects that typically require daily vehicle trips. Any adverse cumulative impact from increased daily vehicle trips may be most noticeable on rural roadways with low baseline traffic volumes. However, because these roadways have low existing traffic volumes, an increase in traffic volumes may not have adverse effects. The trips generated due to the RMPA would be negligible in terms of traffic volumes on the roadways serving the C-CD over the next 15-20 years. Therefore, increased vehicle trips from the RMPA would have a minor negative cumulative effects on the performance of the circulation system.

When reviewing the cumulative projects that may affect the area where RMPA impacts are expected to occur; only the projects identified in **Table 4.15-2** could result in cumulative impacts from public access to C-CD. Future projects on BLM-administered lands would require further project- and site-specific environmental analysis, during which time applicable PDFs, BMPs, and other measures would be identified and imposed to reduce adverse effects to existing transportation routes or access points. Furthermore, coordination with CALTRANS and the County of Santa Cruz would reduce adverse effects to existing coastal access points along the North Coast adjacent to C-CD. With BLM's discretionary review of future projects, conflicts between the RMPA, other regional trail connectivity projects, and the management of existing transportation routes would be avoided.

Assuming the development trends in the region continue, cumulative impacts on transportation from Alternatives A, B, C, and D would be negligible because effects associated with increased visitor use at C-CD would be hard to measure when combined with recreation on other conservation lands over the next 15-20 years.

Lands and Realty

Cumulative impacts to the lands and realty program would result from other projects or activities that combine with the impacts of the RMPA. The geographic scope for cumulative effects to lands and realty is defined as the BLM-administered surface land within the C-CD.

Cumulative projects that may affect the C-CD have been identified in **Table 4.15-2**. Future lands and realty activities subject to BLM approval would require further project- and site-specific analysis, during which time applicable PDFs, BMPs, and other conditions of approval (COAs) would be identified. With BLM's discretionary review of future proposals, conflicts between lands and realty actions and other projects within the C-CD would be avoided.

Assuming the development trends in the region continue, cumulative impacts on lands and realty from Alternatives A, B, C, and D would be negligible because effects on land use and valid existing rights from the RMPA would be managed consistently with the over-arching goals to the goals and objectives for the C-CD unit of the CCNM.

Cumulative impacts to utilities and communication sites would result from impacts of the RMPA that combine with impacts of other projects or actions within the County of Santa Cruz. The utilities considered in this RMPA/EA include electrical transmission lines, water pipelines, gas pipeline, and communication facilities.

The collective effects of the RMPA on utilities and communication sites are interrelated with growth trends in the planning area. Expansion or modification of existing facilities would require further project- and site-specific analysis by the BLM, during which time applicable PDFs and other conditions of approval would be identified and imposed as necessary. With BLM's discretionary review of lands and realty actions within the C-CD, potential conflicts with other cumulative projects or actions in Santa Cruz County would be avoided.

Social and Economic Conditions

The geographic scope for cumulative impacts is generally limited to the County of Santa Cruz. Effects would likely be county specific because local jurisdictions or districts provide public services and utilities, and the regional labor force would be expected to come primarily from Santa Cruz and from neighboring communities.

Construction of cumulative projects listed in **Table 4.15-2** may bring workers to the communities proximate to and serving individual project locations. This type of temporary growth should be expected for construction of large scale projects that typically require contractors, many of whom have specialized skills.

However, given the projected population growth within the region, the RMPA is expected to have minor beneficial cumulative effects on social and economic conditions.

While some degree of social disruption is likely to accompany cumulative short-term construction worker in-migration (particularly if a number of large-scale projects are built simultaneously within the same localized area), it is difficult to predict the extent to which specific communities are likely to be affected, which population groups within each community are likely to be most affected, and the extent to which social disruption is likely to persist beyond facility construction. This is because such a cumulative impact would be highly dependent on projects having overlapping construction time frames. Should cumulative project development result in a recognizable scale of temporary construction worker relocations to local communities, regardless of the amount the RMPA contributes within these localized communities, some social change is expected to occur cumulatively but is considered to be minor.

Beneficial economic impacts would occur from the development of cumulative projects identified in **Table 4.15-2**. Workforce wages and spending during the construction and operation of cumulative projects would be an economic stimulator to regional and local governments. Other important public benefits include both short-term and long-term increases in local expenditures, payrolls, and sales tax revenues. These would positively affect the economy at regional and local levels. The development of cumulative regional conservation lands may adversely affect environmental amenities including environmental quality, stable rural community values, and cultural values. The development of regional trail connectivity could reduce a community's ability to attract some new types of businesses. However, other economic and demographic factors would play a role in the economic development potential of any particular location.

With respect to environmental justice, the community of Davenport represents a low-income population, and the City of Santa Cruz also has a high percentage of minorities. However, when reviewing the locations of comparable lands and cumulative projects identified in **Tables 4.15-1** and **4.15-2**, these areas show beneficial cumulative effects on low-income or minority from increased regional trail connectivity and recreation opportunities. Assuming the development trends in the region continue, adverse cumulative impacts on social and economic conditions from Alternatives A, B, C, and D would be negligible because effects associated with increased visitor use at C-CD would be hard to measure when combined with recreation on other conservation lands over the next 15-20 years.

Wild and Scenic Rivers

Cumulative impacts to National Wild and Scenic Rivers (NWSRs) would result from impacts of the RMPA that combine with impacts of other projects or actions on eligible river segments within the C-CD. Designated NWSRs are not located in the vicinity of C-CD, and as such would not be affected by the RMPA.

Recreation and its' associated demand within the planning area would continue to be limited by the management prescriptions for eligible river segments (**Appendix E**). With implementation of the PDFs identified in **Appendix D**, the Proposed RMPA would have negligible impacts on NWSRs. The BLM would also implement management direction through project-level decision-making to avoid impacts to river values from future projects, as required by BLM Manual 6400.

The BLM management decisions considered in the RMPA are unlikely to combine with the list of cumulative projects to adversely impact eligible river segments in the C-CD. While some visitor use would occur off-trails, the associated disturbance would be short term and infrequent. With BLM's discretionary review and approval of future proposed actions near eligible NWSRs, the RMPA would not combine with other regional trail connectivity projects to create a cumulative effect because implementation of PDFs and BMPs, the Proposed RMPA would have negligible impacts on SMAs, and would not combine with present or future projects to create adverse cumulative effects.

5. Consultation and Coordination

5.1 Introduction

This document has been prepared with input from interested agencies, organizations, and individuals. Public involvement is a vital component of the planning process. Guidance for implementing public involvement is codified in 40 Code of Federal Regulations (CFR) 1506.6 and 43 CFR 1610. As summarized below, the BLM made a diligent effort to involve the public in the preparation of this RMPA/EA. Formal public involvement was conducted in two phases, as follows:

- Public scoping prior to National Environmental Policy Act (NEPA) analysis to obtain public input on issues, the scope of the analysis, and to develop the range of alternatives, and
- Public review and comment on the Draft RMPA/EA, which included analyzing possible environmental impacts of the range of alternatives for the C-CD.

A summary of public involvement during the C-CD planning process is presented in Section 5.2.

5.2 Outreach

5.2.1 Early Community Engagement

Since the donation of C-CD to the BLM in 2014, the BLM has engaged with surrounding communities and interested parties. The BLM held two public workshops on December 4 and 13, 2018, in Santa Cruz and Bonny Doon, respectively. The purpose of the workshops was to introduce BLM staff to the public, outline the BLM's planning process, and solicit early feedback from the public on potential access points for C-CD. Approximately 150 people participated in the workshops, which culminated in a workshop report that helped inform this planning effort (BLM 2018).

5.2.2 Notice of Intent

The BLM published the Notice of Intent (NOI) to Prepare a Resource Management Plan Amendment (RMPA) and EA for C-CD in the *Federal Register* on June 24, 2019. This was accompanied by two agency news releases to promote public involvement during the 30-day public scoping period. The BLM also sent emails directly to interested individuals and parties announcing the date, time, and location of two public scoping meetings held on the Draft RMPA/EA. The results of these meetings are described in Section 5.2.4.1.

5.2.2 Advertisements and Announcements

The BLM published a news release to announce the availability of the C-CD Draft RMPA and Environmental Assessment for a 30-day public comment period on February 14, 2020. The news release requested members of the community to provide public input on the draft Cotoni-Coast Dairies Management Plan Amendment to the Resource Management Plan for the California Coastal National Monument. The news release and public meeting materials directed interested parties to the ePlanning project website where comments can be submitted on-line. The BLM also sent emails directly to interested individuals and parties announcing the date, time, and location of two public comment meetings held on the Draft RMPA/EA. The results of these meetings are described in Section 5.2.4.2.

5.2.3 BLM Website

The BLM maintains a website (<https://go.usa.gov/xEJAaw>) to inform the public about upcoming events, activities, and planning information. The website provides background information about the project,

public workshops and scoping meetings, news releases, the Draft RMPA/EA, plus contact information for the BLM Central Coast Field Office.

5.2.4 Public Meetings

5.2.4.1 Scoping Meetings

Following publication of the NOI in the Federal Register, the BLM hosted two formal scoping meetings in July 2019. Each meeting included a PowerPoint presentation to provide context for the proposed project and an information package to introduce participants to the BLM's planning process for the C-CD. Nearly 200 members of the public attended one (or both) of these meetings, which included an opportunity for oral public statements. The public scoping meetings were held at:

- Santa Cruz, California, at the Loudon Nelson Community Center, July 17, 2019;
- Davenport, California, at the Pacific Elementary School, July 18, 2019;

The scoping comment period ran for 42 days ending on August 2, 2019. The BLM received 620 responses to the NOI for the C-CD RMPA/EA, which included various forms letters from non-governmental organizations promoting recreational access or residents expressing concerns about potential impacts on the community.

A summary of the results of the scoping period are included in the Final Scoping Report (BLM 2019).

5.2.4.2 Draft RMPA/EA Public Meetings

Concurrent with the release of this Draft RMPA/EA for 30-day public review, the BLM announced two public meetings to be held during the comment period. The meetings were attended by more than 100 people at each location. The BLM was able to share information about the draft RMPA and solicit feedback from participants allowing dozens of speakers an equal amount of time to address issues or concerns associated with the range of alternatives considered in the draft RMPA. The public comment period ran for 42 days ending on April 3, 2020. A total of 862 comment submissions were received from individuals, agencies, and organizations. A complete summary of the public comments is provided in **Appendix J**.

Dates and locations of the two public meetings were:

- Bonny Doon, California, at the Bonny Doon Elementary School, March 4, 2020
- Santa Cruz, California, at the Loudon Nelson Community Center, March 5, 2020

5.2.5 Consultation

5.2.5.1 Endangered Species Act

The BLM has prepared a biological assessment for Alternative D (the agency's Preferred Alternative) that will be submitted to initiate formal consultation with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA-NMFS) pursuant to the Endangered Species Act of 1973 and 50 CFR 402 and the Essential Fish Habitat provisions of Section 305 (b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1996, as amended (16 U.S.C. 1801 et seq.), respectively. Formal consultation with the U.S. Fish and Wildlife Service is expected to result in a Biological Opinion (BO) for the C-CD RMPA for the Federally-listed threatened California red-legged frog. Formal consultation with the NOAA-NMFS is expected to result in a Biological Opinion for the C-CD RMPA for the Federally-listed threatened Central California Coast coho salmon and Central California Coast steelhead trout.

5.2.5.2 Native American Tribes

The decision area does not fall within the ancestral homeland of any Federally recognized tribes. Nonetheless, the BLM is consulting with non-Federally recognized Native American tribal representatives during the development of the RMPA/EA, consistent with BLM Handbook 1780-1, Improving and Sustaining BLM-Tribal Relations. In particular, consultation with the Amah Mutsun Tribal Band (AMTB) is ongoing and will continue throughout the planning process, and afterwards during implementation.

In 2016, the BLM signed a Memorandum of Understanding (MOU) with the Amah Mutsun Land Trust (AMLT), a non-profit organization created by the AMTB, with a mission to conserve and restore indigenous cultural and natural resources, land stewardship, and research. Through this MOU and partnership, the BLM frequently provides representatives of the AMLT with regular planning updates. The AMLT also assisted the BLM with the identification of cultural resources, including historic properties that tribes may attach religious and cultural significance to and may be affected by proposed plan related actions.

The AMLT submitted written comments during public scoping and during the public comment period on the draft RMPA. The Director of the AMLT also provided verbal comments during the public speaking opportunities at every BLM meeting held during the C-CD planning process.

Several other tribal entities or individuals submitted comments that expressed support for the AMLT and the BLM to continue coordination and consultation during the planning process and implementation of the RMPA. Consultation is ongoing and will continue throughout the planning process to ensure that cultural resources and the concerns of tribal groups are considered.

5.2.5.3 National Historic Preservation Act

In order to comply with the requirements of Section 106 of the National Historic Preservation Act (NHPA), the BLM must consider potential impacts to cultural resources that may occur as a result of authorized activities. BLM permitted actions related to the C-CD are subject to NHPA.

The BLM completed two rounds of consultation with the California State Historic Preservation Officer (SHPO) beginning in June 2019 for scoping, and again upon release of the Draft RMPA/EA as required under the BLM California Protocol Agreement with the California and Nevada State Historic Preservation Officers. On July 29, 2019, the SHPO responded that it agreed with the the BLM's recommendation that the BLM should proceed with Section 106 review for the RMPA under the BLM California Protocol Agreement. For the RMPA, the BLM proposes a finding of no adverse effect under the Protocol.

5.2.5.4 California Coastal Commission

The Coastal Zone Management Act (CZMA) (16 USC. 1451 et seq.) granted states the ability to review federal agency activities that affect the coastal zone and, in some circumstances, to stop or modify federally permitted activities that are not consistent with the state coastal program. The CZMA applies to actions initiated, permitted, or funded by federal agencies within the coastal zone. While the coastal zone by definition does not include federal land, the CZMA nonetheless applies to most federal activities or federally permitted activities that are located adjacent to or near the coastal zone, because such activities often affect the coastal zone and the resources therein—both onshore and off shore. Since the donation of C-CD, the BLM has coordinated closely with the California Coastal Commission on activities on the property. The BLM has prepared a consistency determination that will be submitted to the California Coastal Commission concurrent with the release of the Proposed RMPA/EA.

5.2.6 Other Outreach and Consultation

5.2.6.1 Federal, State, and Local Governments

The BLM sent letters to the following Federal, State, and local agencies inviting them to be cooperating agencies for the project: California Department of Forestry and Fire Protection (CalFire), California Department of Transportation (CalTrans), California Coastal Commission, California Department of Fish and Wildlife (CDFW), California State Parks, U.S. Fish and Wildlife Service (USFWS), NOAA-NMFS, and Santa Cruz County. California State Parks and the Santa Cruz County accepted this invitation. Cooperating agency status ensures close coordination throughout the planning process and has been formalized through memorandums of understanding.

The public scoping process provided opportunities for Federal, State, and local agencies to express their comments and provided meaningful input to the process. During scoping and the public comment period on the draft RMPA/EA, the BLM received written submissions from four State agencies: California State Parks, California Department of Transportation (CalTrans), California Coastal Commission, and California Department of Fish and Wildlife (CDFW); as well as two written submissions from local agencies including the County of Santa Cruz, and the City of Santa Cruz (Water Department). Coordination with these entities will be ongoing throughout the planning process and implementation of the RMPA.

5.2.6.2 Partnerships

As noted in the original RMP (BLM 2005), partnerships provide the collaboration focus for the CCNM. Therefore, the BLM needs to continue existing partnerships with other government and non-government entities, while also fostering new opportunities for collaboration to effectively implement the C-CD RMPA. Currently, the BLM has established agreements with the California State Department of Parks and Recreation (CDPR) and the California Department of Fish and Wildlife (CDFW) to serve as the core partners for management of the CCNM off-shore rocks and islands. Similar to the BLM, these agencies have statutory and regulatory authority (i.e. jurisdiction) that allows them to operate within the boundaries of the CCNM. Therefore, the BLM will continue to coordinate with these core partners on the implementation of the RMPA.

Other potential partnerships with other government and non-government organizations will help to implement particular resource /use program areas for C-CD. These collaborative partnerships can be developed with a wide variety of agencies, tribes, schools, universities, and other private entities. These partners have specific interests or responsibilities that, when linked with C-CD, enhance both the CCNM's mission and the goals of the BLM's collaborative partners. These partnerships will include entities that oversee similar resources, have program related interests, are involved in a related activity, and/or oversee adjacent locations.

Ultimately, the BLM has the responsibility for the C-CD and its management. As such, it will serve as the final decision-making authority for the actions on the CCNM, with consultation on major decision to be conducted with core partners. State and local agencies, while being involved in all aspects of C-CD management, will play more specific roles as dictated by their respective agency missions and areas of expertise, at a level commensurate with available funding.

5.3 List of Preparers

Name	Title	BLM Office
Benjamin Blom	Field Manager	Central Coast Field Office
Sky Murphy	Planning & Environmental Coordinator	Central Coast Field Office
Michael Powers	Natural Resource Specialist	Central Coast Field Office
Michael Westphal	Ecologist	Central Coast Field Office
Emme Nix	Associate – Wildlife Biologist	Central Coast Field Office
Rebecca Spitzer	Archeologist	Central Coast Field Office
Gregory Middleton	Geologist	Central Coast Field Office
Ryan O'Dell	Natural Resource Specialist	Central Coast Field Office
Adam Wilde	Outdoor Recreation Planner	Central Coast Field Office
Alexander Mairs	Cartographic Technician	Central Coast Field Office
Stacey Schmidt	Natural Resource Specialist (Range)	Central Coast Field Office
Christine Sloand	Realty Specialist	Central Coast Field Office
William Standley	Natural Resource Specialist (CCNM)	California Coastal National Monument
Aleta Nafus	Project Manager [for Ukiah Field Office]	Central Coast Field Office (duty station)
Michael Chiodini	Fire Mitigation & Education Specialist	Central Coast Field Office
Ryan Aeby	Fire Management Specialist	Central California District
David Fuller	Planning and Environmental Coordinator	California State Office
Nina Hemphill	Natural Resource Specialist	California State Office
Andrew Johnson	Ecologist	California State Office
Jane Arteaga	Outdoor Recreation Planner	California State Office
Jack Hamby	Project Manager	California State Office
Erik Pignata	Realty Specialist	California State Office



Finding of No Significant Impact (FONSI)

On January 12, 2017, Presidential Proclamation 9563 added the Cotoni-Coast Dairies unit to the California Coastal National Monument (CCNM). This proclamation called for the Cotoni-Coast Dairies (C-CD) unit to be available for public access upon the BLM's completion of a management plan. The BLM released a Draft Resource Management Plan Amendment (RMPA) and Environmental Assessment (EA), as well as a Draft Finding of No Significant Impact (FONSI) for a 45-day public comment period on February 24, 2020. The Draft RMPA analyzed a range of alternatives (Alternatives A, B and C) that would provide opportunities for public access and recreation at C-CD, while ensuring care for the objects and values identified in Presidential Proclamation 9563. These objects include traditional use areas of the indigenous people, archaeological resources, as well as a wide array of habitats and the diversity of wildlife that they support, including forests, shrublands, grasslands, riparian/wetlands, and aquatic systems.

Following the public comment period, the BLM analyzed public comments and developed a Proposed RMPA and EA. Based on public feedback, the BLM crafted a fourth alternative (Alternative D), which has been incorporated into the Proposed RMPA and EA and identified as the agency preferred alternative. This FONSI reviews the impacts of the preferred alternative or proposed action, Alternative D.

Context

The geographic scope of the RMPA comprises 5,843 acres of public land managed by the BLM's Central Coast Field Office in Santa Cruz County, California. The C-CD is located approximately ten miles north of the City of Santa Cruz along State Highway 1. It surrounds the small, rural, coastal community of Davenport. Prior to European contact, the Cotoni tribelet of the Costanoan People (also called the Ohlone) inhabited the area - making use of the landscape's diverse resources - for thousands of years. The landscape of C-CD is defined by a prominent series of stair-stepped marine terraces that rise from the coastline on the western edge and culminate in the steep terrain of the Santa Cruz Mountains at the eastern edge. The marine terraces are dissected by six perennial streams that flow from the Santa Cruz Mountains to the ocean. The wide, open terraces provide expansive, sweeping views of the Pacific Ocean. The steep gradient of topography and climate at C-CD produce a wide diversity of niches that support riparian zones and wetlands, grasslands, coastal scrub, oak woodlands, and conifer forest. These diverse habitats in turn, support numerous fish and wildlife species including coho salmon, steelhead, California red legged frogs, mule deer, and mountain lions.

Intensity

The BLM considered the following criteria established by the Council for Environmental Quality (CEQ) to evaluate intensity:

1) Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effects will be beneficial.

As discussed in the supporting analysis (Chapter 4) of the Proposed RMPA and EA, beneficial and adverse effects are anticipated for biological, cultural, and other resources. Adverse effects are anticipated to be less than significant because of protective measures and project design features (Appendix D) incorporated into Alternative D. These measures minimize or avoid impacts to biological and cultural resources, while allowing for public access and other uses of C-CD. Measures designed to minimize or avoid effects to biological and cultural resources within Alternative D of the Proposed RMPA include (but are not limited to) the following:

- Establishment of a weeds control program to eradicate and prevent the introduction and spread of non-native, invasive plant species (MA-VEG-1)
- Measures designed to avoid and/or minimize surface disturbance within 100 feet of area waterways (MA-RIP-2)
- Measures requiring temporary trail and facility closures when continued use could lead to trail damage or erosion (MA-RIP-3)
- Prohibition or limitations on activities that could result in harm to cultural resources (AU-CUL-8)
- Establishment of Resource Management Zones 2 and 4 (3,187 acres, 55%) as core fish and wildlife protection areas where trail development will be precluded and public access will be limited to permitted uses, traditional cultural practices, and guided tours (MA-WLD-6 and MA-REC-12)
- Requirement that all visitors stay on designated trails unless specifically authorized (AU-REC-4)
- Camping is allowed with an access permit only for traditional cultural practices, work groups, research, and educational purposes (AU-REC-5)
- Restrictions on dogs to on-leash only and limited to designated trails (AU-REC-6)
- Limits on placement of picnicking areas to minimize impacts of corvids and gulls (MA-REC-15)
- Phased approach to trail and facility development that will ensure that the BLM is able to effectively manage public access on C-CD prior to proceeding with full build out of trails and facilities on the property (MA-REC-16)
- Actions to fence spring developments and riparian areas to prevent trampling by livestock (MA-GRZ-3)

2) The degree to which the proposed action affects public health or safety.

Alternative D is not anticipated to cause significant adverse impacts to public health or safety. Appendix K contains a supplemental traffic analysis, which documents potential impacts of the alternatives on public safety. This study concludes that traffic and roadway safety will not be significantly impacted by the proposed trail and trailhead developments. The proposed parking areas and visitor services to support public access at C-CD would improve public safety by providing public restrooms, trash collection, and legal parking areas. Collection of fees for use of the property

will ensure a sufficient funding stream to maintain and monitor these facilities. Following completion of this RMPA, the BLM will continue to work with the public and partners to monitor and evaluate potential public health and safety concerns related to development of recreational trails and facilities on the property.

Prior to implementing Phase 2 of recreational facility and trail development, the BLM will evaluate the adequacy of its facilities to meet anticipated increased visitation.

3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

Alternative D will not have a significant effect on historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. The BLM has completed Class III cultural surveys of all phase 1 implementation actions proposed in the RMPA. The BLM does not anticipate significant effects to historic or cultural resources from development under phase 1. Similar surveys will be completed for phase 2 implementation actions prior to the signing of the decision record for the RMPA. The BLM has identified Recreation Management Zones 2 and 4 as core fish and wildlife protection zones and areas where traditional cultural practices will be emphasized. This area encompasses 3,187 acres, or 55% of C-CD, and encompasses the entire CCNM portion of the watersheds of San Vicente, Liddell and Laguna Creeks to protect resource objects and values.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The effects on the quality of the human environment of proposed uses in Alternative D (primarily non-motorized recreation and livestock grazing) are not considered to be highly controversial because the effects of these activities are well-understood. The project design features incorporated into Appendix D are designed to minimize potential effects associated with these uses. “The term ‘highly controversial’ refers to instances in which ‘a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.’” *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).

5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

Alternative D allows for public access and recreational uses of C-CD, while identifying indicators to be monitored throughout implementation (Appendix C). The BLM has incorporated a phased approach to implementation into Alternative D to ensure that the BLM’s management approach is resulting in predicted outcomes prior to implementation of phase 2. The BLM maintains the authority to delay or adjust implementation of the RMPA if unforeseen effects occur.

In addition, the public access and recreational uses proposed under Alternative D are similar to activities that occur on other properties in the region, including Wilder Ranch State Park and Fort Ord National Monument. In both cases, effects of recreational use and public access are well understood and have not involved unique or unknown risks.

6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

Alternative D proposes to establish public access and recreational uses (including hiking, mountain biking, equestrian use, and archery hunting) on C-CD. These uses are common on BLM-managed public lands, including within National Monuments and other National Conservation Lands. The other activities proposed under Alternative D (principally vegetation management and livestock grazing) are also common on BLM-managed public lands, including National Monuments. Therefore, the actions proposed under Alternative D do not establish a precedent.

The C-CD is one of six on-shore units added to the CCONM by Presidential Proclamation. It is the first on-shore unit to develop a RMP amendment. However, this is not likely to establish a precedent for other onshore units of the CCONM because the six on-shore units are geographically distinct and spread along hundreds of miles of the California coast. Each unit is unique, as reflected in the establishing Proclamation and has its own set of objects and values. The environmental and social context for each unit is unique. Subsequent RMP amendments for on-shore units will consider the objects, values, and context of each unit. Therefore, Alternative D does not set a precedent for future actions on these other units of the CCONM.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

Recreation visitation to the planning area is affected by changes in recreation opportunities and demand outside of the C-CD. Other related and recent actions on the North Coast of Santa Cruz County include the San Vicente Redwoods Access Plan and the North Coast Rail Trail project. These projects, in combination with Alternative D of this RMPA, will likely result in additional visitors to the North Coast of Santa Cruz County and could negatively affect individuals who value solitude. However, each project will also increase investment in the region, resulting in improved public facilities within the region (e.g. public restrooms, trash collection). In addition, these projects may result in a small and net beneficial condition to some local communities, as a result of improved land protection and economic benefits from recreation. Future public access development activities subject to local and/or State agency approval would require further project- and site-specific analysis, during which time applicable PDFs, BMPs, and other conditions of approval (COAs) would be identified. With BLM's discretionary review of future proposals, conflicts between reasonably foreseeable actions and other projects on the North Coast of Santa Cruz County would be avoided. Assuming the development trends in the region continue, cumulative impacts on recreation resources from Alternative D would be beneficial because effects on regional trail connectivity from the RMPA would result in outstanding new opportunities for public use and enjoyment in region over the next 15-20 years.

8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in the National Register of Historic Places or may

cause loss or destruction of significant cultural or historical resources.

The BLM has completed Class III cultural resource inventories for Phase 1 implementation actions included within Alternative D of this RMPA and this information has been incorporated into the Proposed RMPA and EA. Based on these surveys and the BLM's commitment to avoid impacts to cultural resources, the BLM does not anticipate adverse impacts to significant cultural or historical resources from the actions proposed under Alternative D. Project design features are incorporated into the range of alternatives to avoid or reduce potential effects on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. Additional plan components address resources of concern unique to Native American individuals and communities. For example, Alternative D emphasizes management of portions of RMZ 2 and 4 for resource protection and traditional cultural practices to ensure that Native American heritage resources potentially eligible for the National Register of Historic Places are protected and preserved.

9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act.

The BLM has initiated consultation with US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service. Through such consultation and coordination, the BLM will ensure that the RMPA will be consistent with the Recovery Plan for the California Red-legged Frog (USFWS 2002), the Recovery Plan for the Evolutionarily Significant Unit of Central California Coast Coho Salmon (NOAA 2012), the South-Central California Coast Steelhead Recovery Plan (NOAA 2013), and the Coastal Multispecies Final Recovery Plan for California Coastal Chinook Salmon, Northern California steelhead and Central California Coast steelhead (NOAA 2016).

The BLM does not anticipate significant adverse impacts on endangered or threatened species or their habitats. Measures included in Alternative D to improve riparian habitat and water quality are anticipated to have a beneficial impact on threatened and endangered species and their habitats.

10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Alternative D does not threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. The BLM is engaged in ongoing coordination and consultation with the US Fish and Wildlife Service, NOAA National Marine Fisheries Service, California Department of Fish and Wildlife, Santa Cruz County, the California Coastal Commission and others to ensure consistency with relevant laws and regulations.

Conclusion

On the basis of the preliminary information contained in the Proposed RMPA and EA, and all other information available to me, it is my determination that: (1) the implementation of the RMPA will not have significant environmental impacts

beyond those already addressed in (i) the EIS for the California Coastal National Monument (CCNM) Resource Management Plan (RMP), approved in 2005; and (ii) the Final EIS for the RMP for the Southern Diablo Mountain Range and Central Coast of California, approved in 2006; and (2) the RMP Amendment does not constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement or a supplement to the existing environmental impact statement is not necessary and will not be prepared.

This finding is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR '1508.27), with regard to the context and to the intensity of the impacts described in the EA.

**KAREN
MOURITSEN**

Digitally signed by KAREN
MOURITSEN
Date: 2020.08.26 08:10:19
-07'00'

Karen E. Mouritsen
BLM California State Director

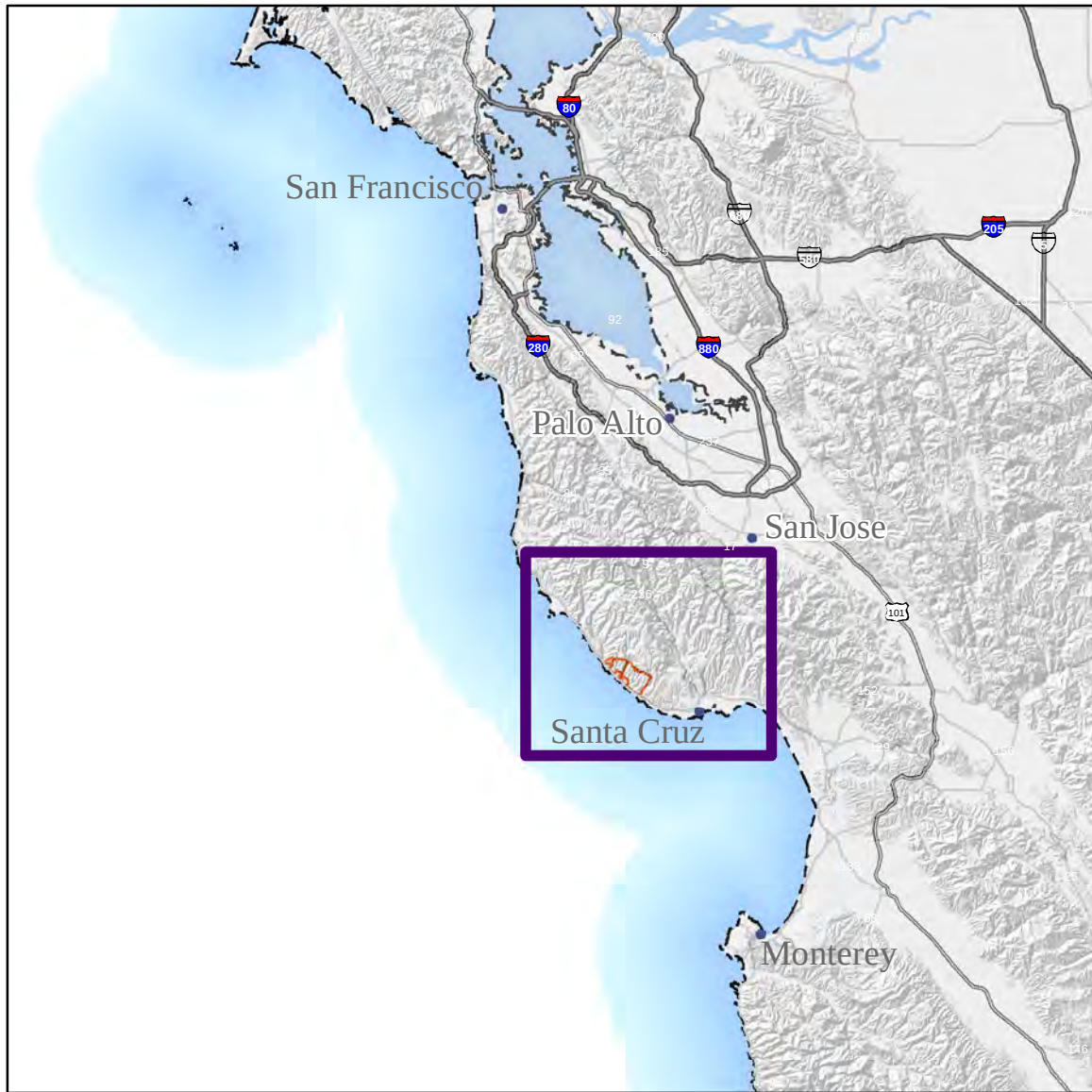
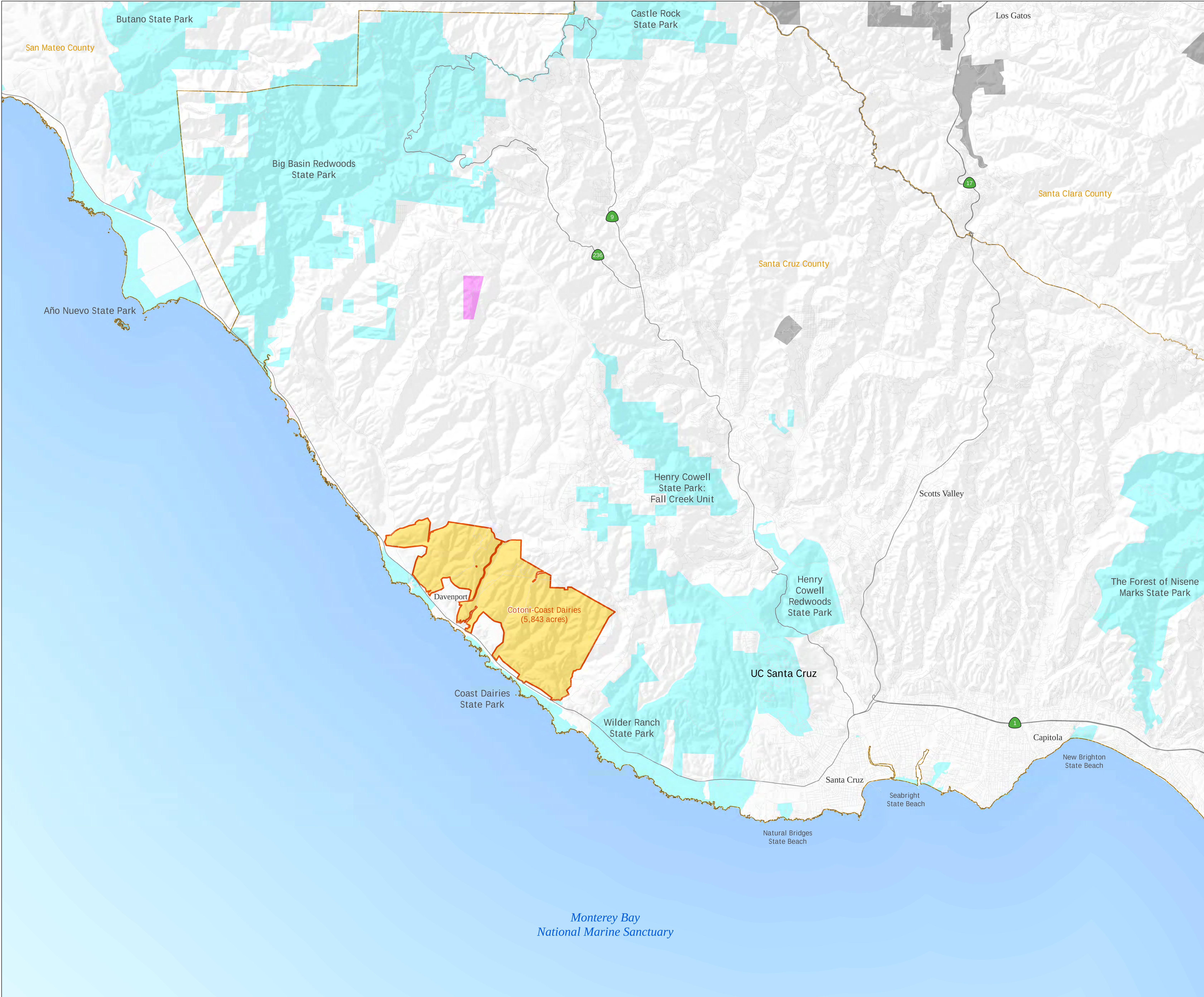
08/26/2020

Date

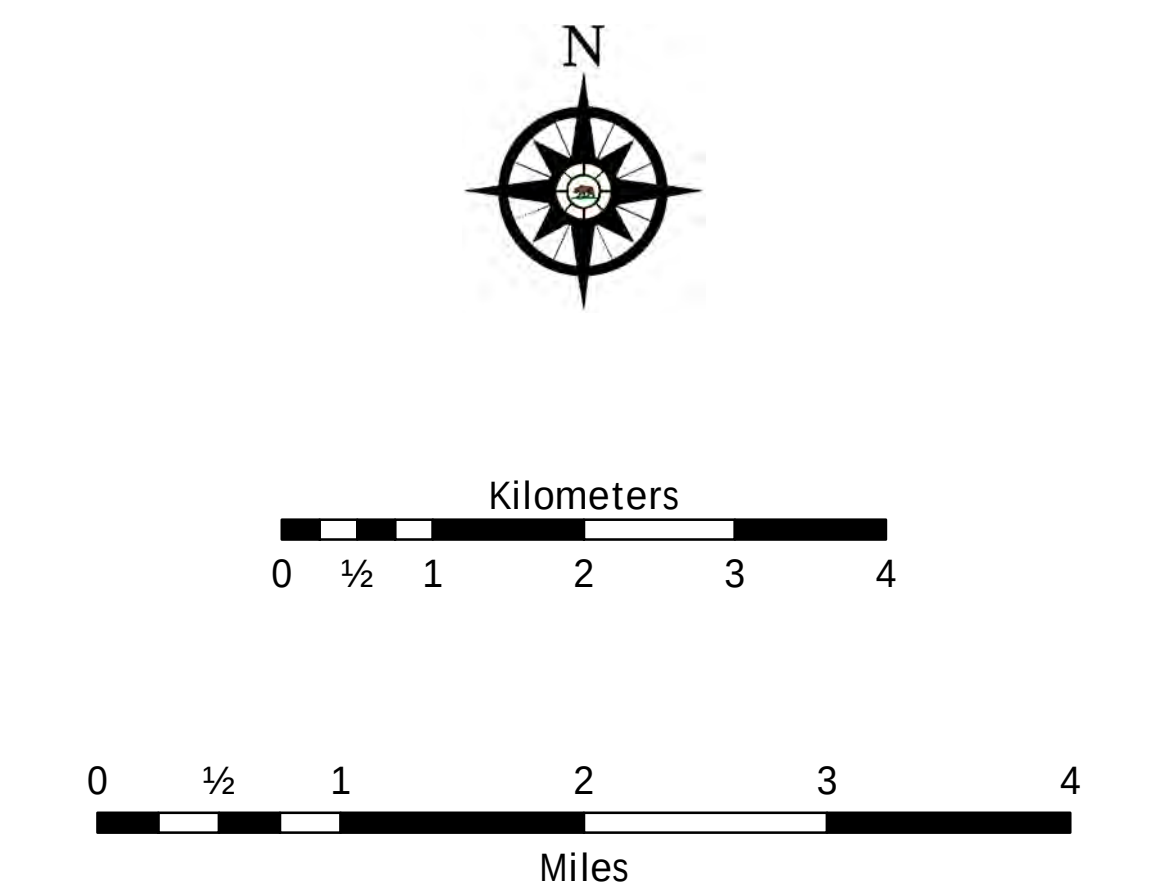
Appendix A - List of Figures

Figure 1	Planning Area Locator Map
Figure 2	Watershed Boundaries and Major Streams
Figure 3	Vegetation Map
Figure 4	Administrative Routes and Transportation
Figures 5A – 5D	Recreation Management Zones - Parking and Trails
Figures 6A – 6D	Recreation Management Zones and Allowable Uses
Figures 7A – 7D	Recreation Management Zones and Vegetation
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Figure 9	Threatened and Endangered Species
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Figure 11	Wild and Scenic River Study
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Figure 13	Geology
Figure 14	CZU Lightning Complex Burn Area

Figure 1: Planning Area Locator Map - Cotoni Coast Dairies
California Coastal National Monument



- Legend**
- Cotoni-Coast Dairies (California Coastal National Monument)
 - California Coastal National Monument
 - Land Status**
 - Bureau of Land Management
 - Department of Defense
 - State
 - Local Government
 - Private/Unclassified



1:50,000

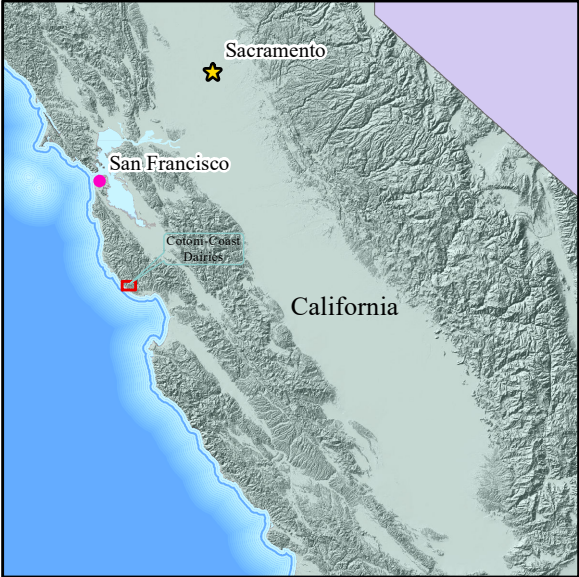
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No warranty is made by the Bureau of Land Management (BLM).
The accuracy, reliability, or completeness of these data for individual
use or aggregate use with other data is not guaranteed.



Figure 2: Cotoni-Coast Dairies Watershed Boundaries and Major Streams

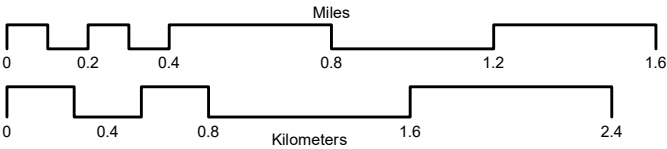
January 8, 2020



Legend

Streams

- Perennial
- - - Intermittent
- Bureau of Land Management



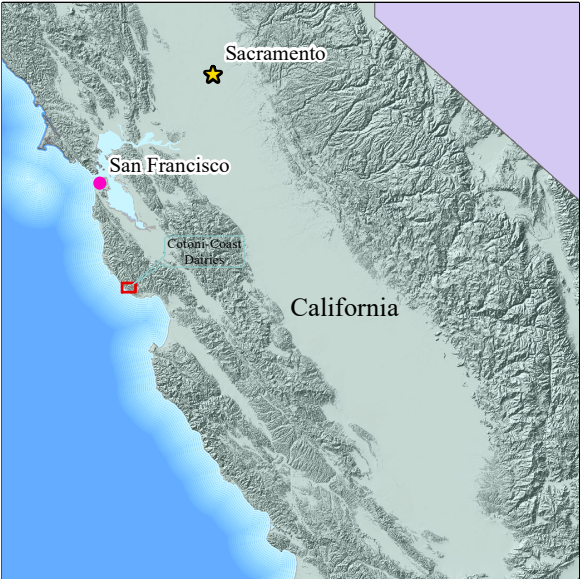
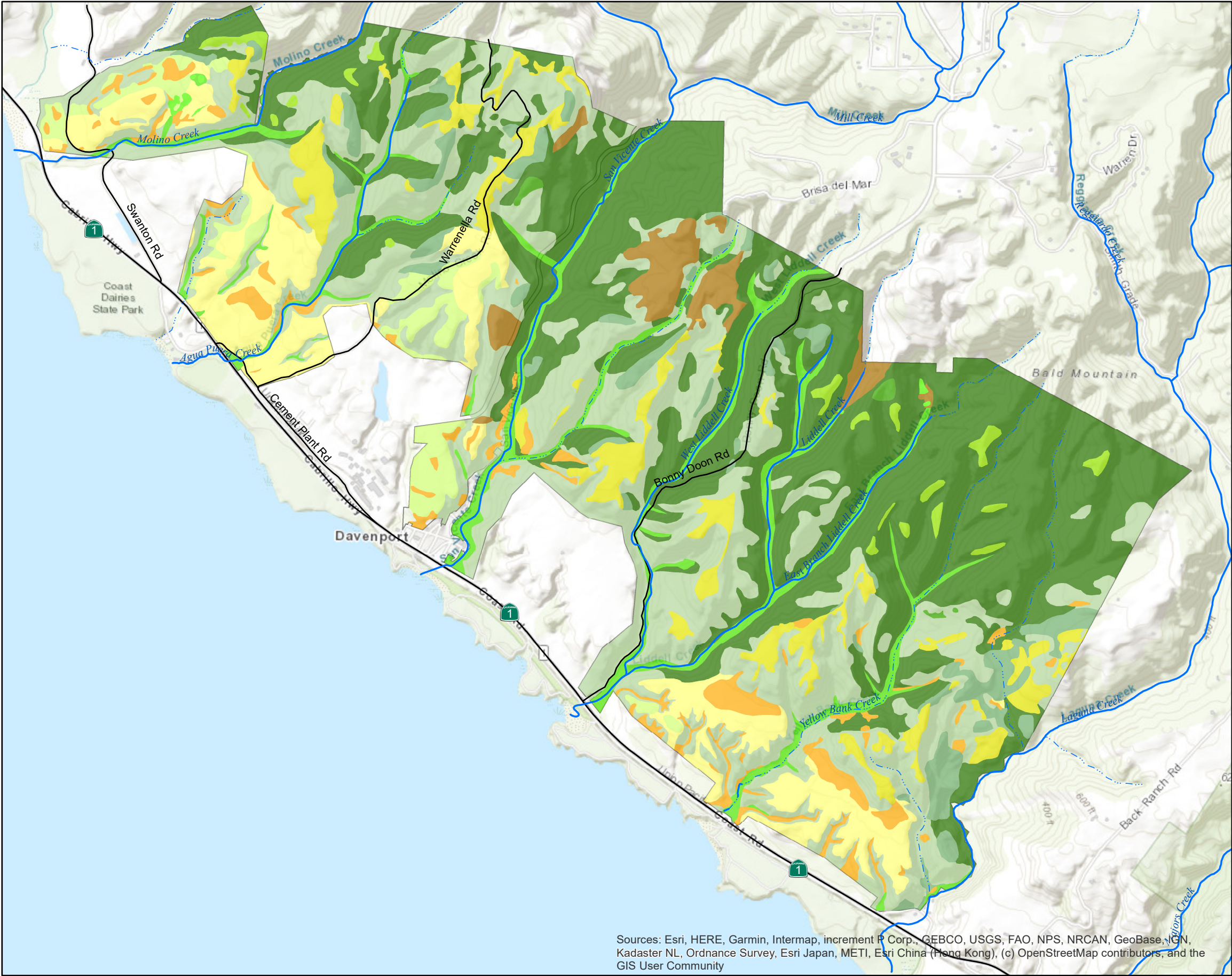
No warranty by the Bureau of Land Management (BLM).
The accuracy, reliability, or completeness of these data for individual
use or aggregate use with other data is not guaranteed.

Map intended to be plotted at a sheet size of 11" x 17"

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

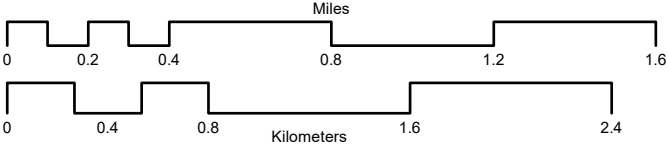
Figure 3: Cotoni-Coast Dairies Vegetation Map

January 21, 2020



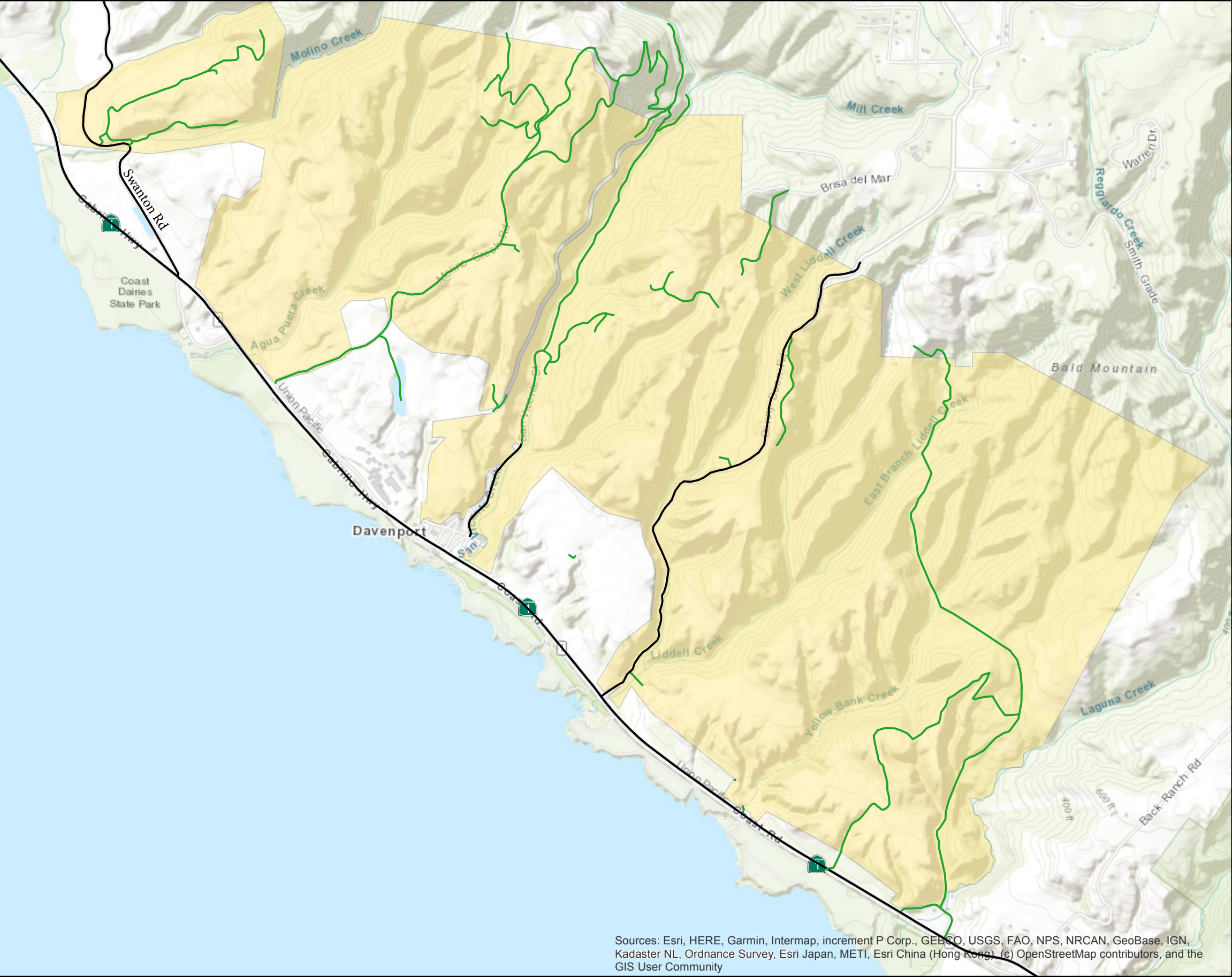
Legend

- Quarries (abandoned)
- Conifer forest
- Broadleaf forest
- Chaparral
- Coast live oak woodland
- Coastal scrub
- Coyote brush encroachment
- Native grassland
- Non-native grassland
- Weedy/ruderal patch
- Perennial wetlands
- Riparian zones

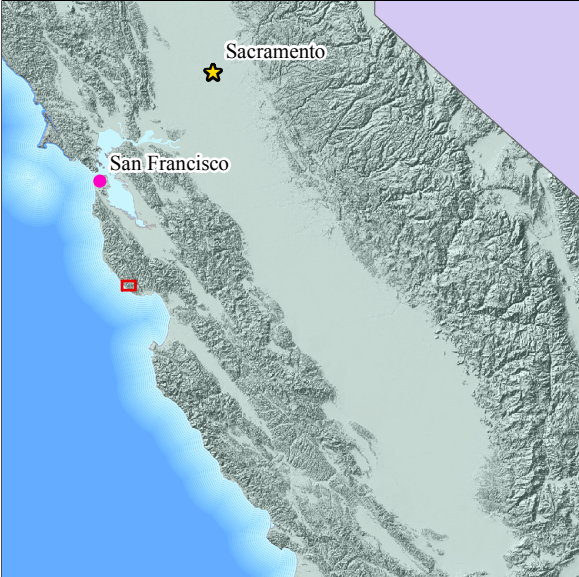


No warranty by the Bureau of Land Management (BLM).
 The accuracy, reliability, or completeness of these data for individual
 use or aggregate use with other data is not guaranteed.
 Map intended to be plotted at a sheet size of 11" x 17"

Figure 4: Cotoni-Coast Dairies Administrative Routes and Transportation



Author: Alexander Mairs, December 6, 2019



Legend

Condition

- Admin Route
- County Road
- Bureau of Land Management

Miles

0 0.2 0.4 0.8 1.2 1.6

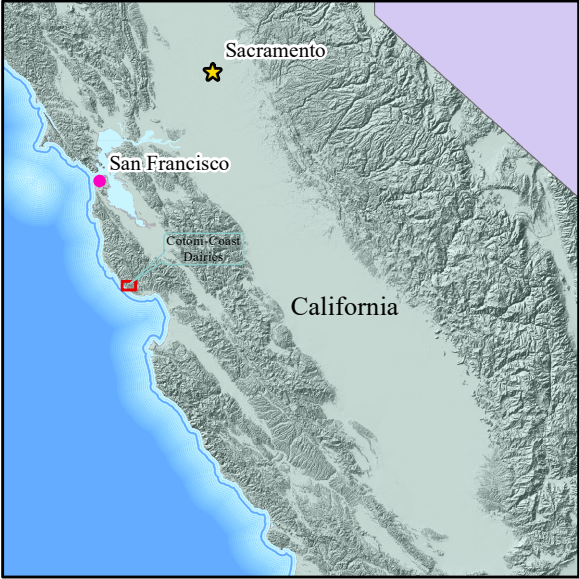
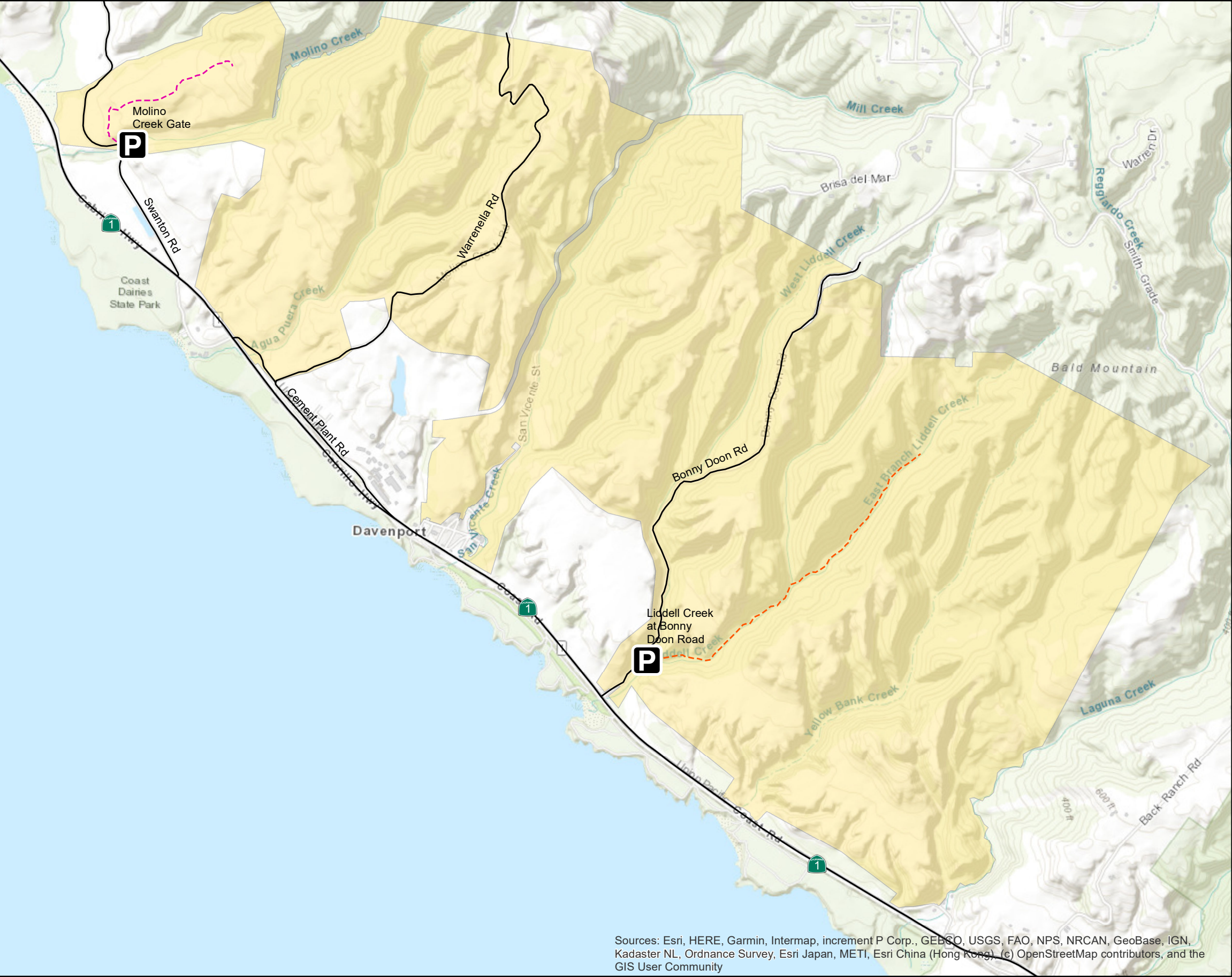
Kilometers

0 0.4 0.8 1.6 2.4

No warranty by the Bureau of Land Management (BLM).
The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.
Map intended to be plotted at a sheet size of 11" x 17"

TN
GN
MN

Figure 5A: Cotoni-Coast Dairies Recreation Management Zones with Parking and Trail Concepts
Alternative A

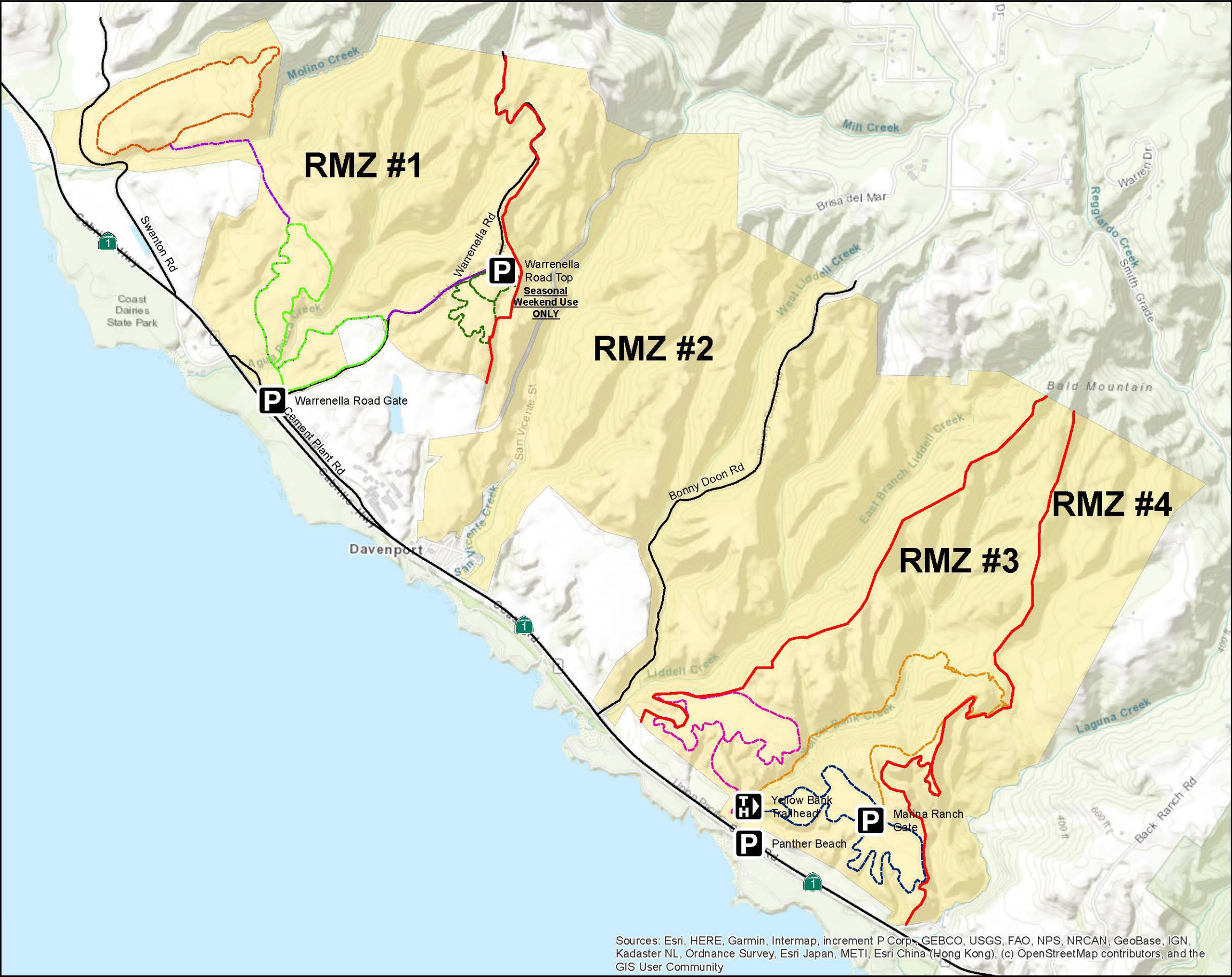


Legend

- Day Use Area
- Trailhead
- Liddell Creek Trail
- Molino Creek Trail
- Bureau of Land Management

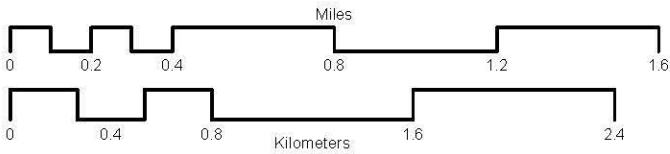
Figure 5B: Cotoni-Coast Dairies Recreation Management Zones w/ Parking and Trail Concepts (Alternative B)

February 4, 2020



Legend

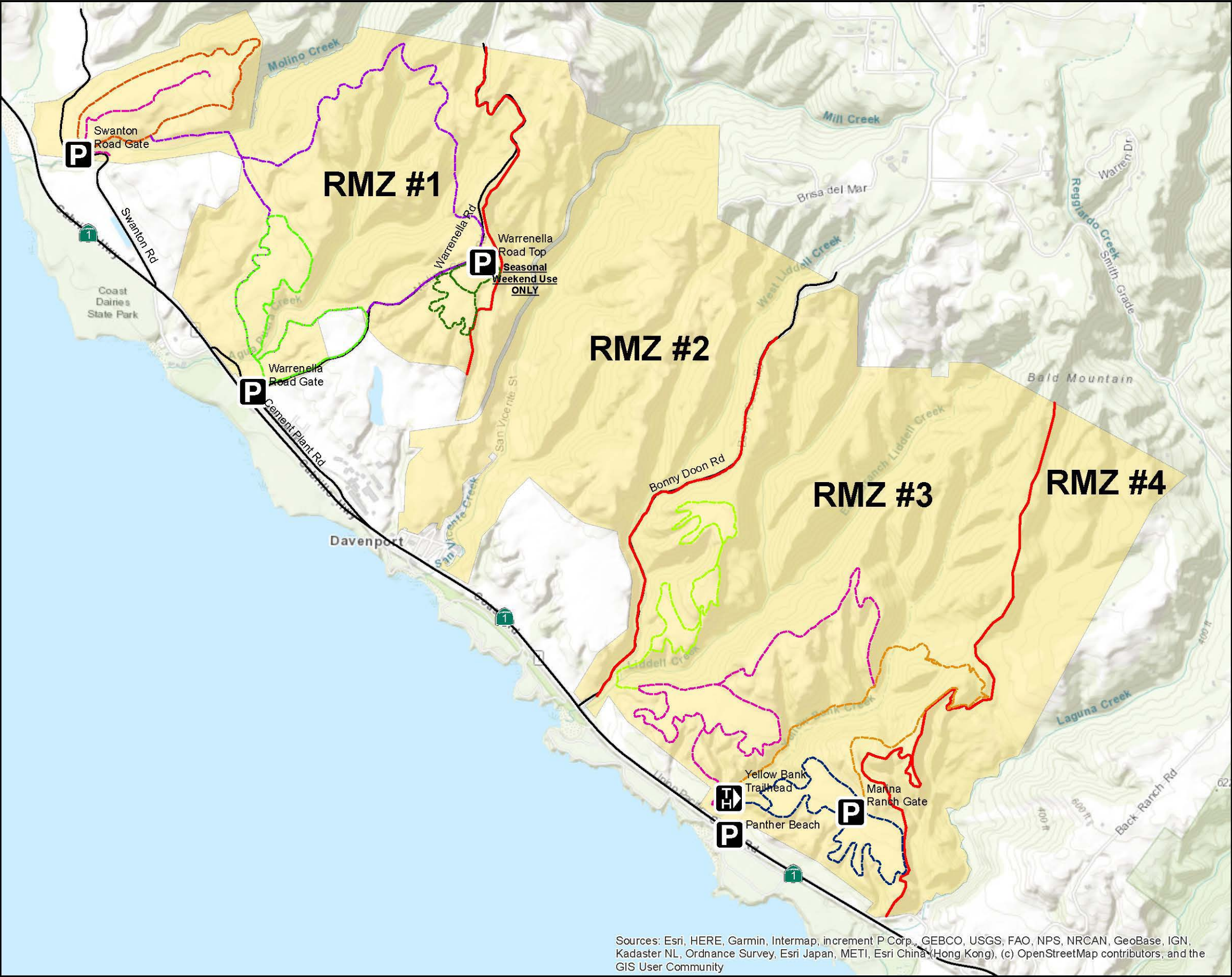
- P** Parking & Day Use Area
- H** Trailhead
- Molino Bank Loop
- Agua Puerca Trail
- Agua Puerca Loops
- Warrenella Loops
- Yellow Bank N Loop
- Cotoni Trail
- Yellow Bank S Loop
- Bureau of Land Management



No warranty by the Bureau of Land Management (BLM).
 The accuracy, reliability, or completeness of these data for individual
 use or aggregate use with other data is not guaranteed.
 Map intended to be plotted at a sheet size of 11" x 17"

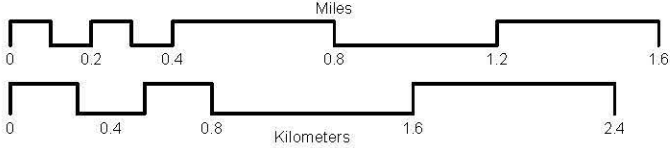
Figure 5C: Cotoni-Coast Dairies Recreation Management Zones w/ Parking and Trail Concepts (Alternative C)

February 4, 2020



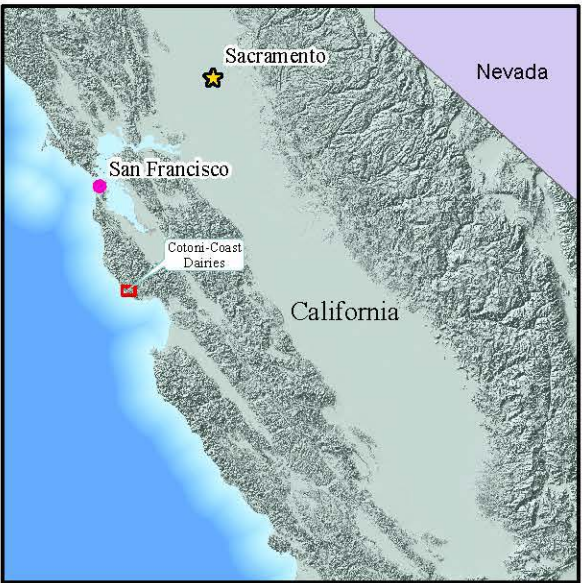
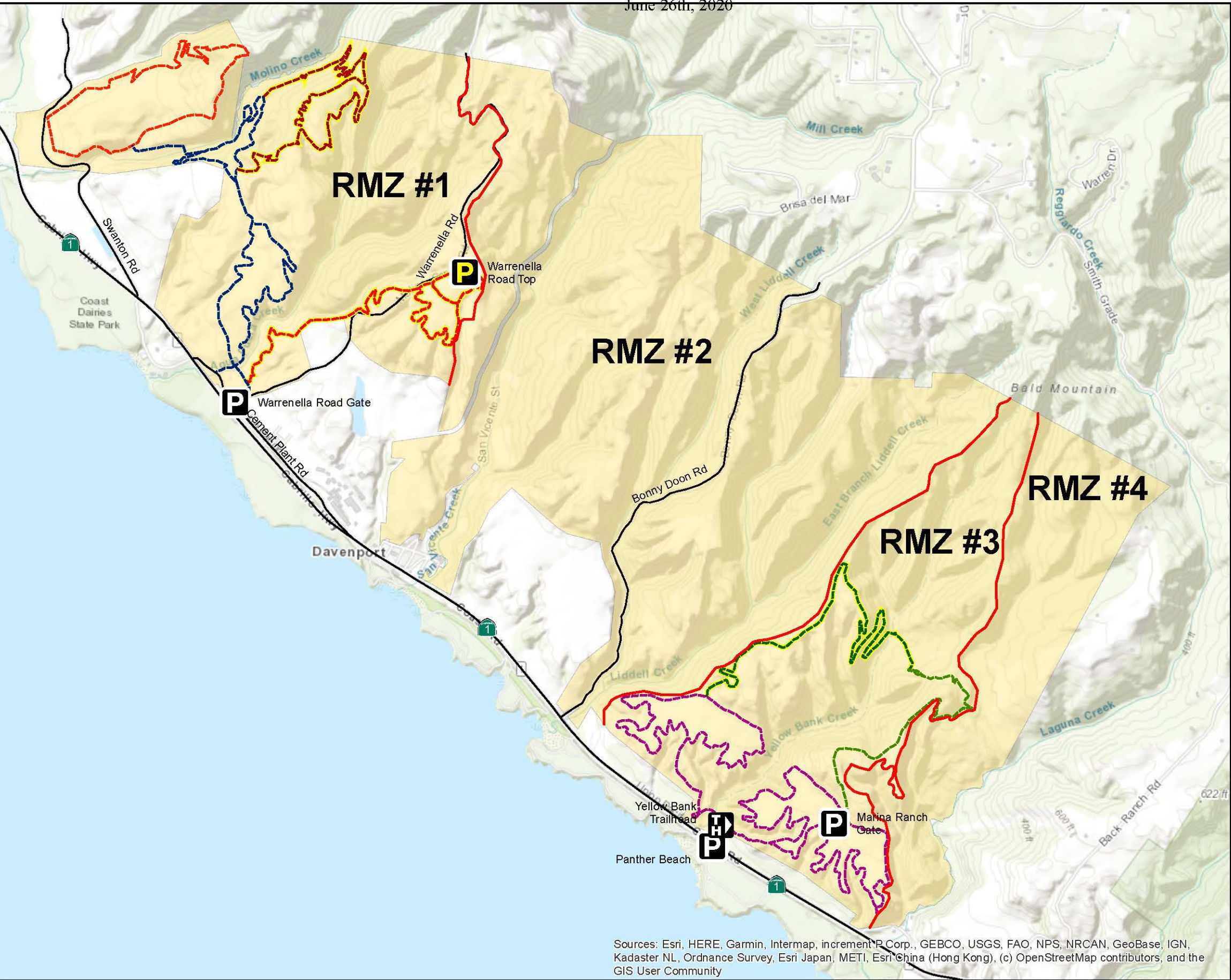
Legend

- Parking & Day Use Area
- Trailhead
- Molino Creek Trail
- Molino Bank Loop
- Agua Puerca Trail
- Agua Puerca Loops
- Warrenella Loops
- Bonny Doon Loops
- Yellow Bank N Loops
- Cotoni Trail
- Yellow Bank S Loop
- Bureau of Land Management



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Figure 5D: Cotoni-Coast Dairies Recreation Management Zones w/ Parking and Trail Concepts
Phase 1 & 2 (Alternative D)



Legend

- Molino Bank Loop
- Agua Puerca Trail
- Yellow Bank N Loop
- Yellow Bank S Loop
- Cotoni Trail
- Phase II trails are highlighted
- Agua Puerca Loops
- Warrenella Loops
- Cotoni Trail Phase II
- Bureau of Land Management

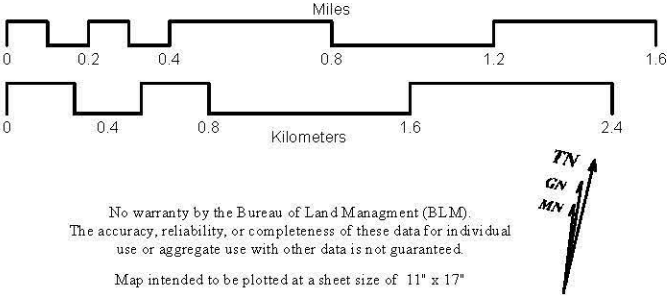
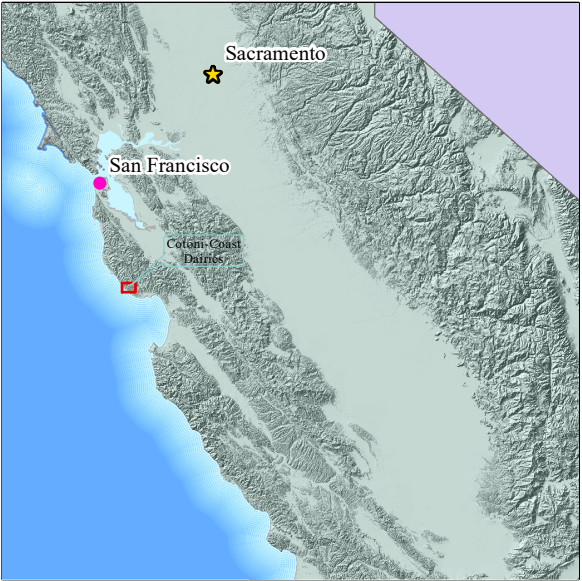
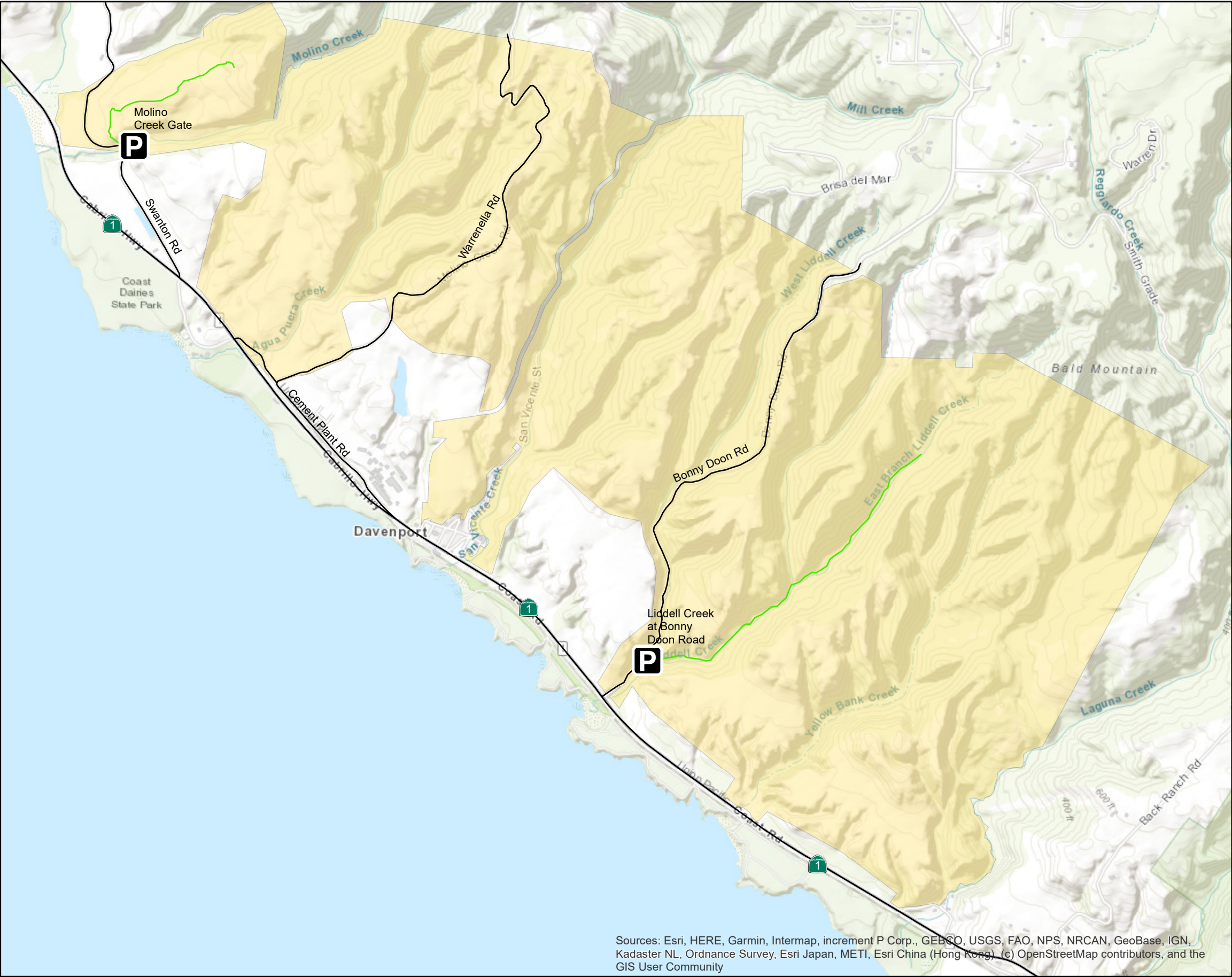


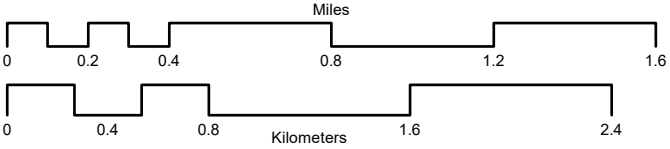
Figure 6A: Cotoni-Coast Dairies Recreation Management Zones w/ Allowable Uses Alternative A

February 4, 2020



Legend

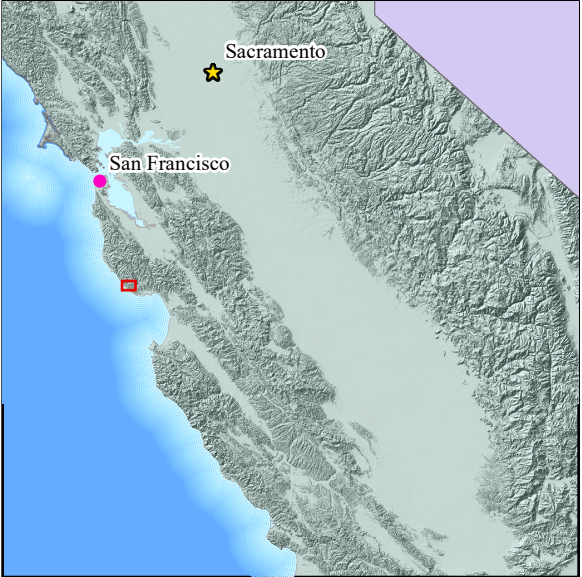
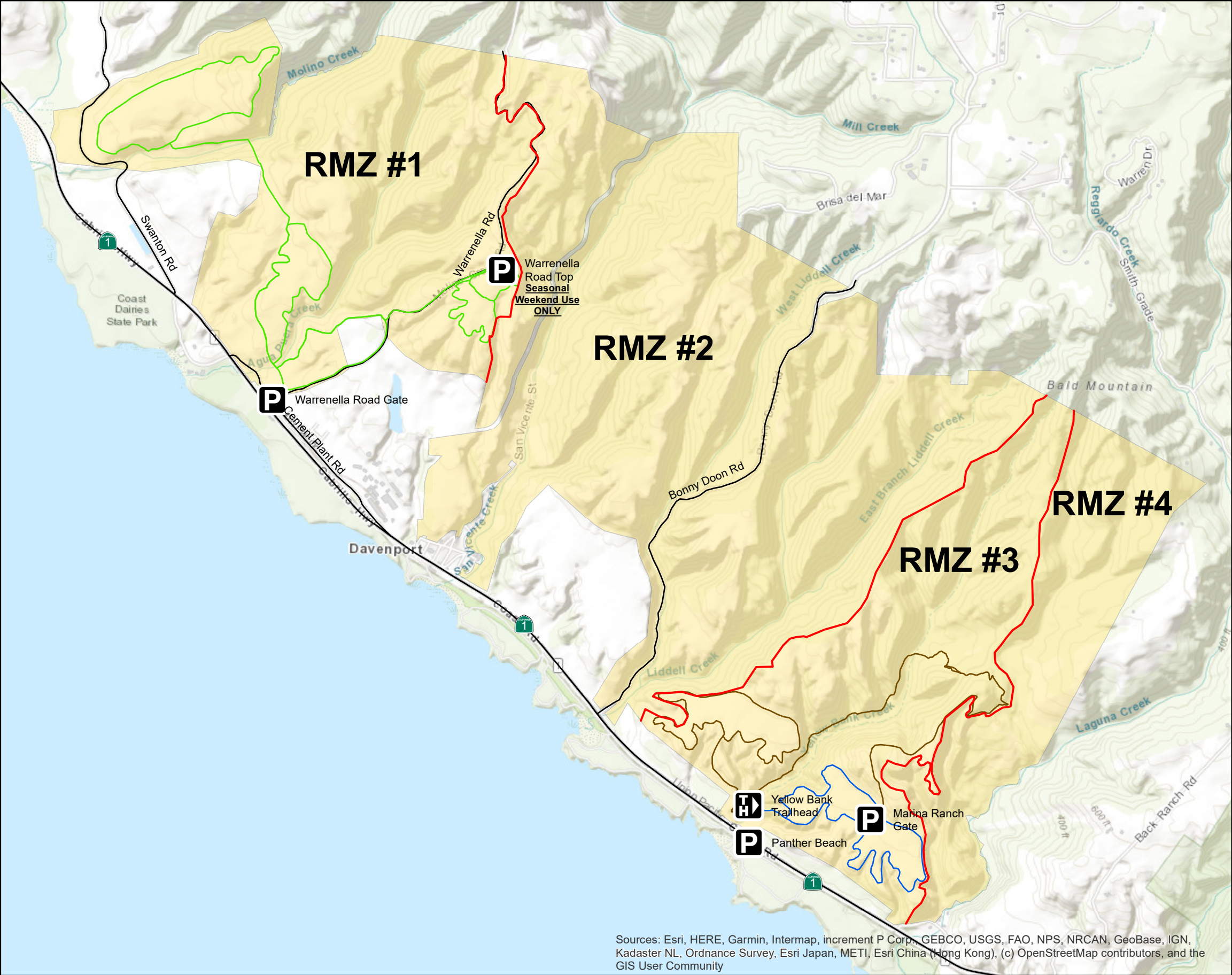
- Parking & Day Use Area
- Trailhead
- Hike Only
- Bureau of Land Management



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 The accuracy, reliability, or completeness of these data for individual
 use or aggregate use with other data is not guaranteed.
 Map intended to be plotted at a sheet size of 11" x 17"

Figure 6B: Cotoni-Coast Dairies Recreation Management Zones w/ Allowable Uses Alternative B

February 4, 2020



Legend

- Parking & Day Use Area
- Trailhead
- Hike and Bike
- Hike and Horse
- Hike, Bike, Horse
- Bureau of Land Management

Miles
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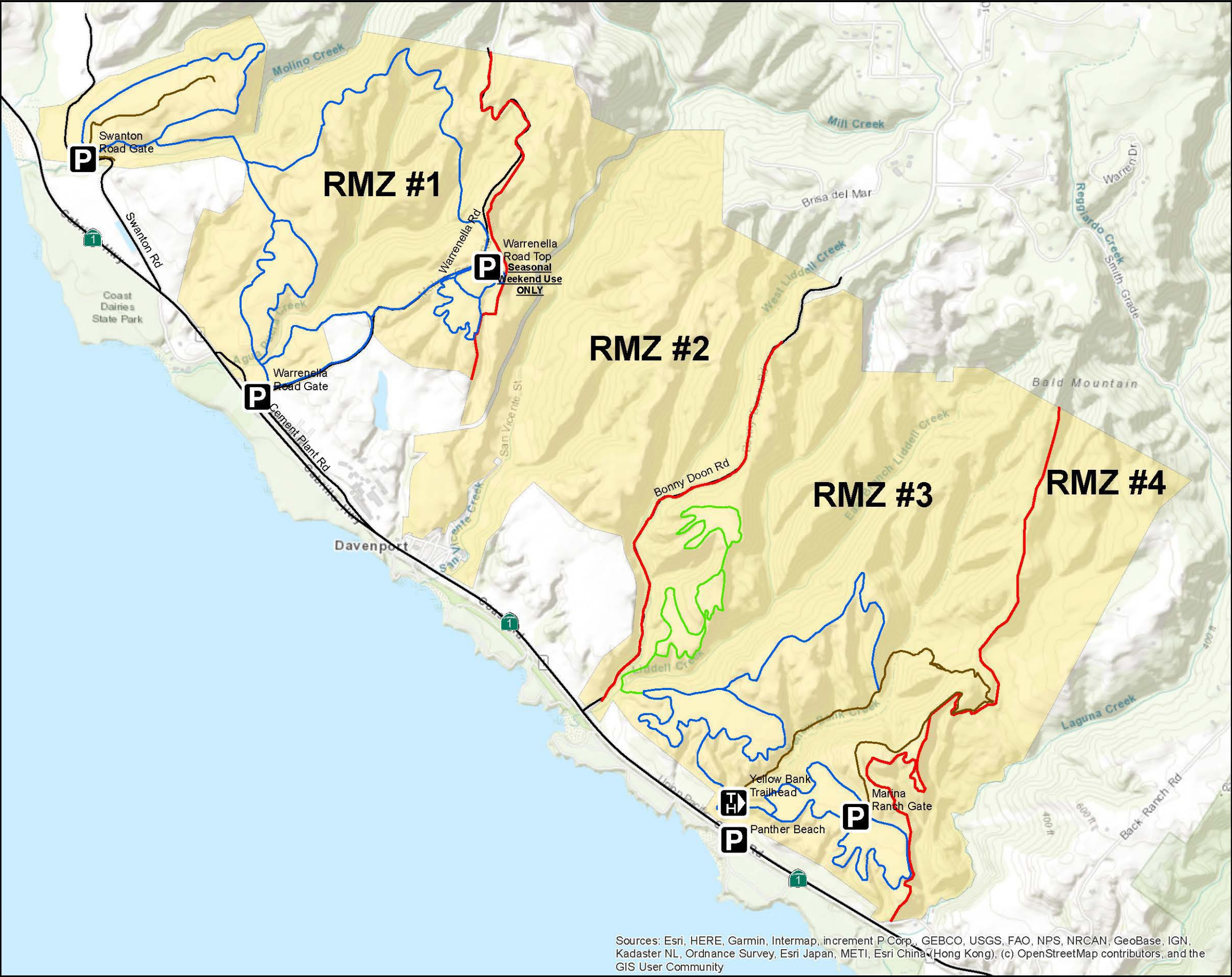
Kilometers
0 0.4 0.8 1.6 2.4

No warranty by the Bureau of Land Management (BLM).
The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.
Map intended to be plotted at a sheet size of 11" x 17"

TN
GN
MN

Figure 6C: Cotoni-Coast Dairies Recreation Management Zones w/ Allowable Uses (Alternative C)

February 4, 2020



Legend

- Parking & Day Use Area
- Trailhead
- Hike and Bike
- Hike and Horse
- Hike, Bike, Horse
- Bureau of Land Management

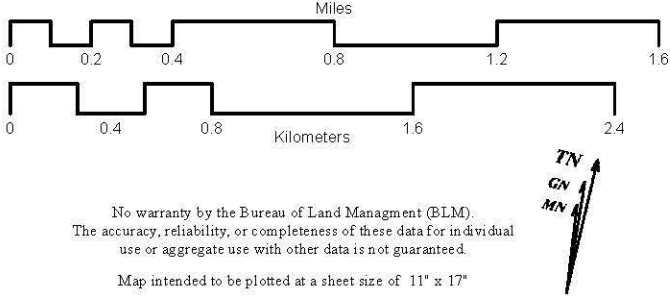
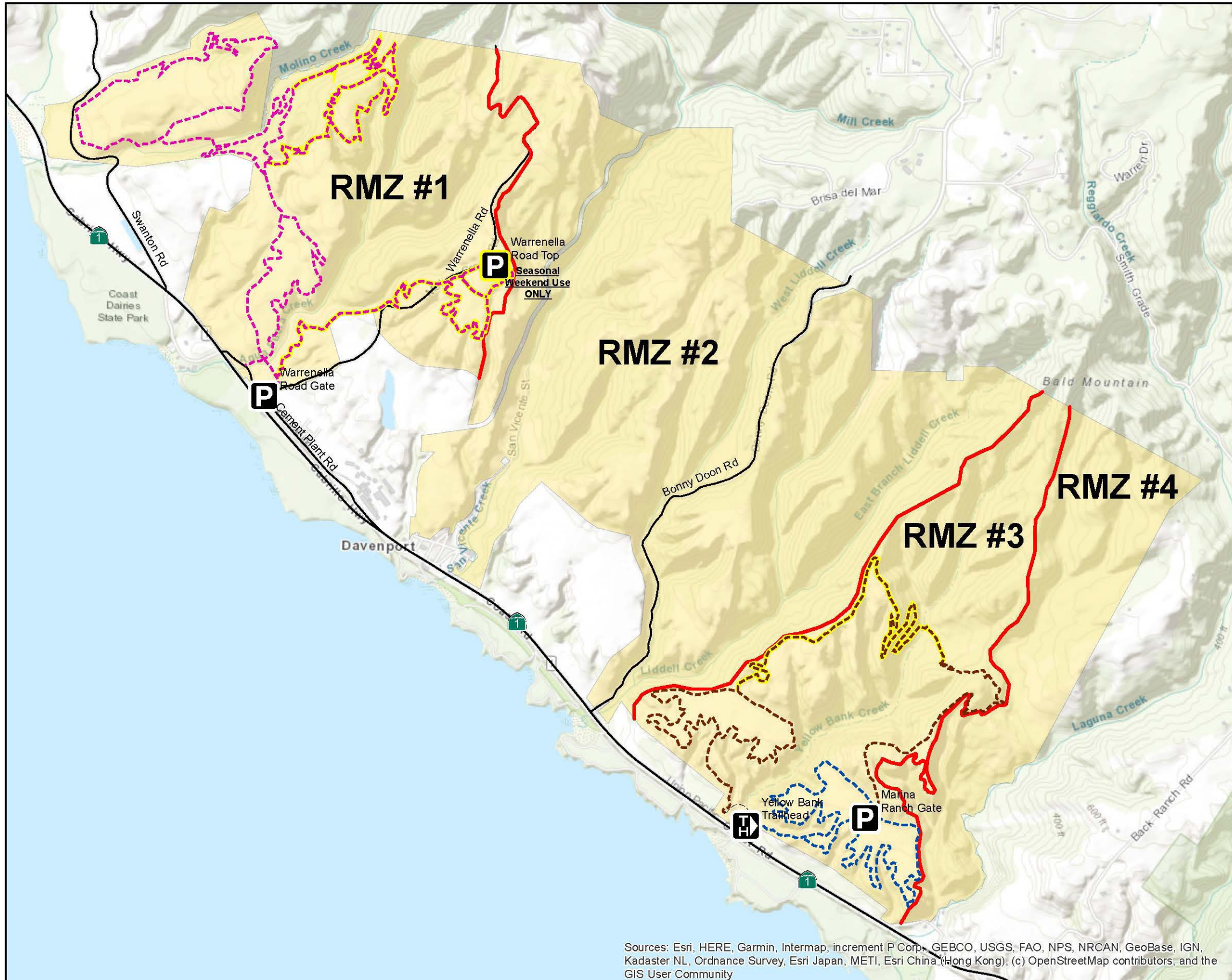


Figure 6D: Cotoni-Coast Dairies Recreation Management Zones w/ Allowable Uses
Alternative D



Legend

-  Parking & Day Use Area
-  Trailhead
-  Hike, Bike
-  Hike, Horse
-  Hike, Bike, Horse
-  Bureau of Land Management
-  Phase II trails and parking are highlighted

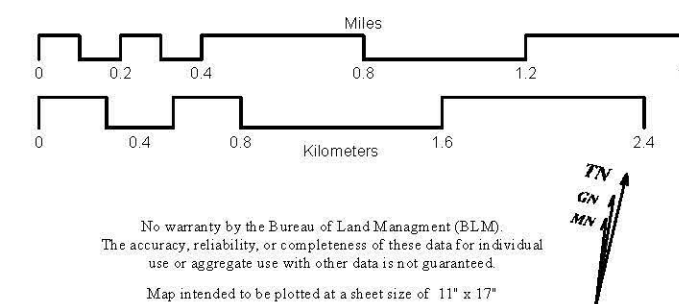


Figure 7A: Cotoni-Coast Dairies Recreation Management Zones and Vegetation Type Alternative A

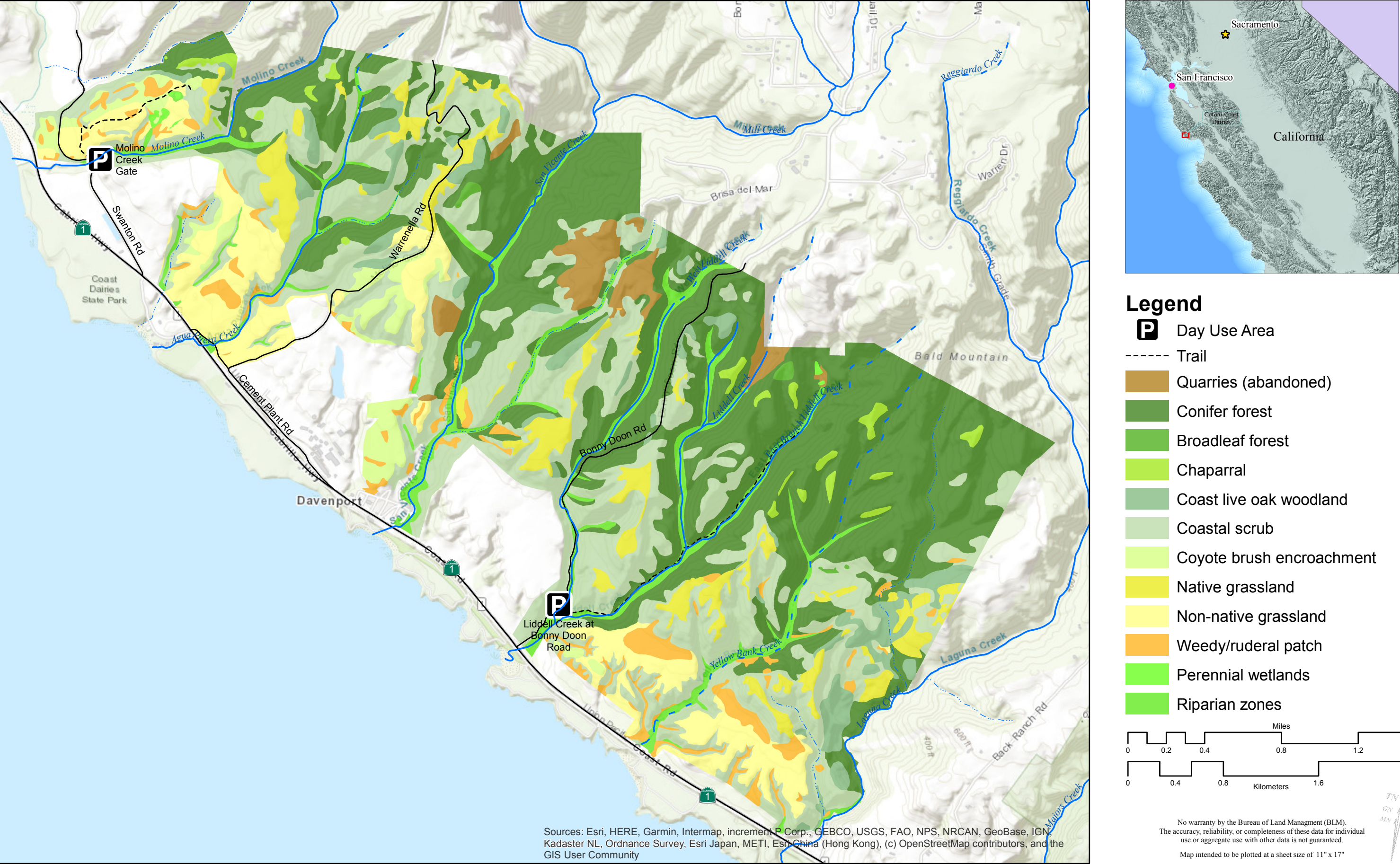


Figure 7B: Cotoni-Coast Dairies Recreation Management Zones and Vegetation Type
Alternative B

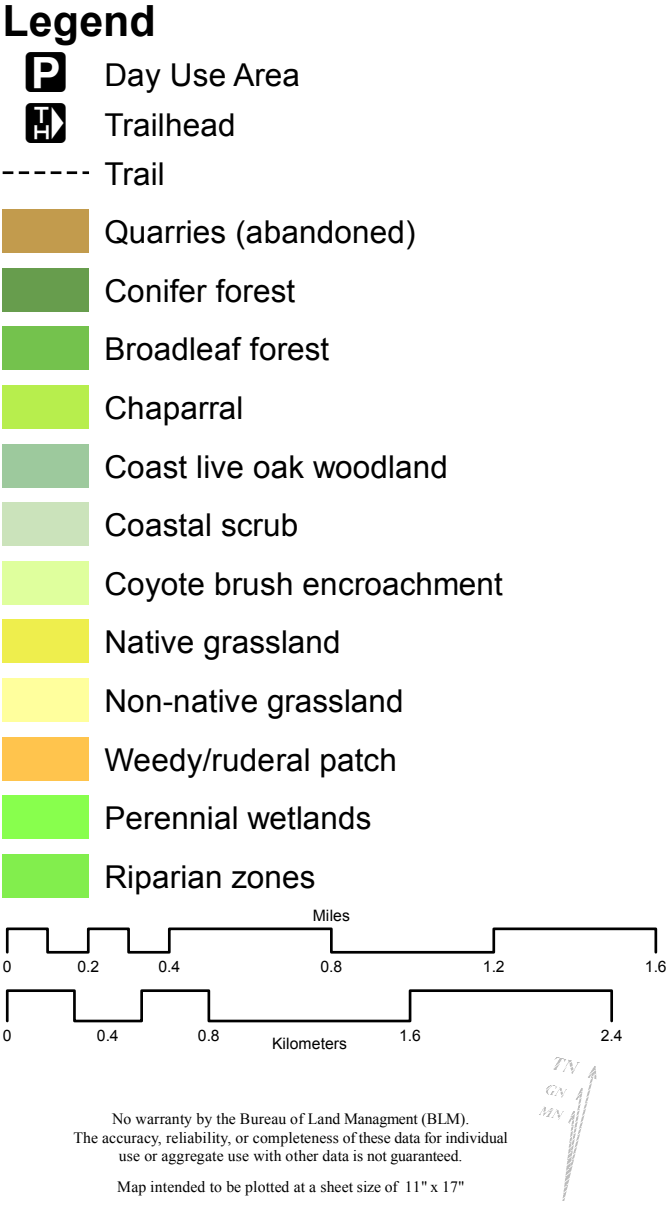
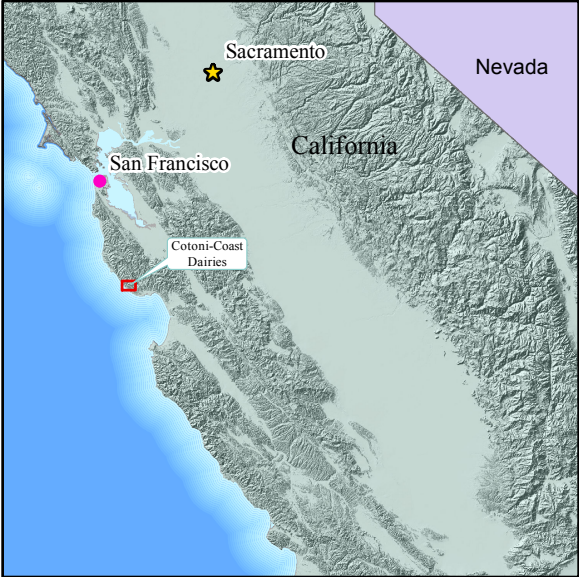
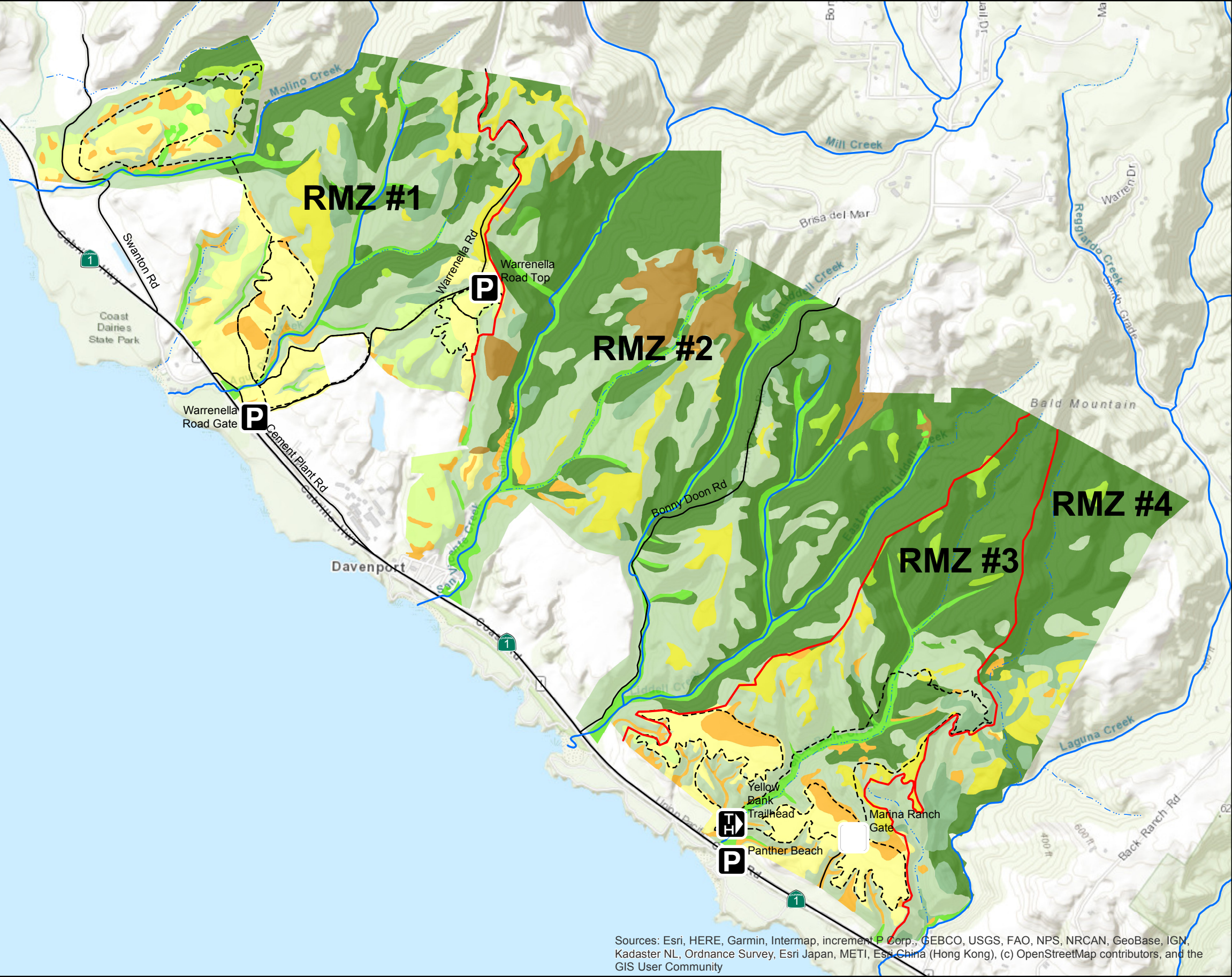
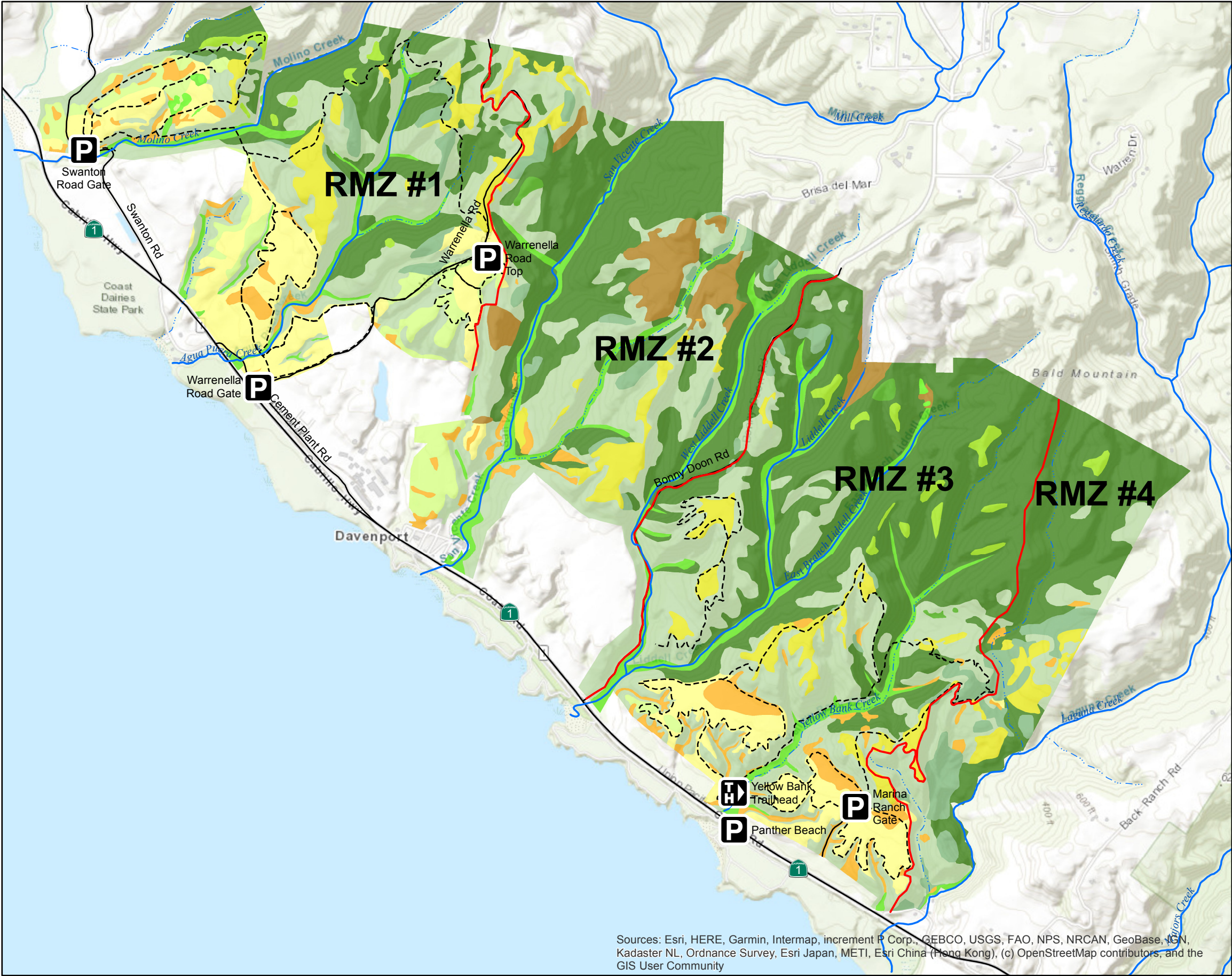
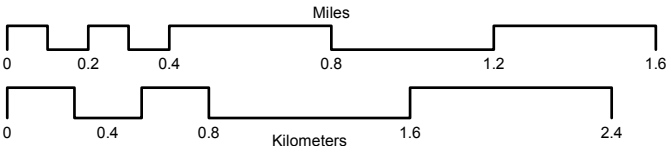


Figure 7C: Cotoni-Coast Dairies Recreation Management Zones and Vegetation Type Alternative C



Legend

- Day Use Area
- Trailhead
- Trail
- Quarries (abandoned)
- Conifer forest
- Broadleaf forest
- Chaparral
- Coast live oak woodland
- Coastal scrub
- Coyote brush encroachment
- Native grassland
- Non-native grassland
- Weedy/ruderal patch
- Perennial wetlands
- Riparian zones



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use or aggregate use with other data is not guaranteed.
Map intended to be plotted at a sheet size of 11" x 17"

Figure 7D: Cotoni-Coast Dairies Recreation Management Zones w/ Vegetation Type
Alternative D

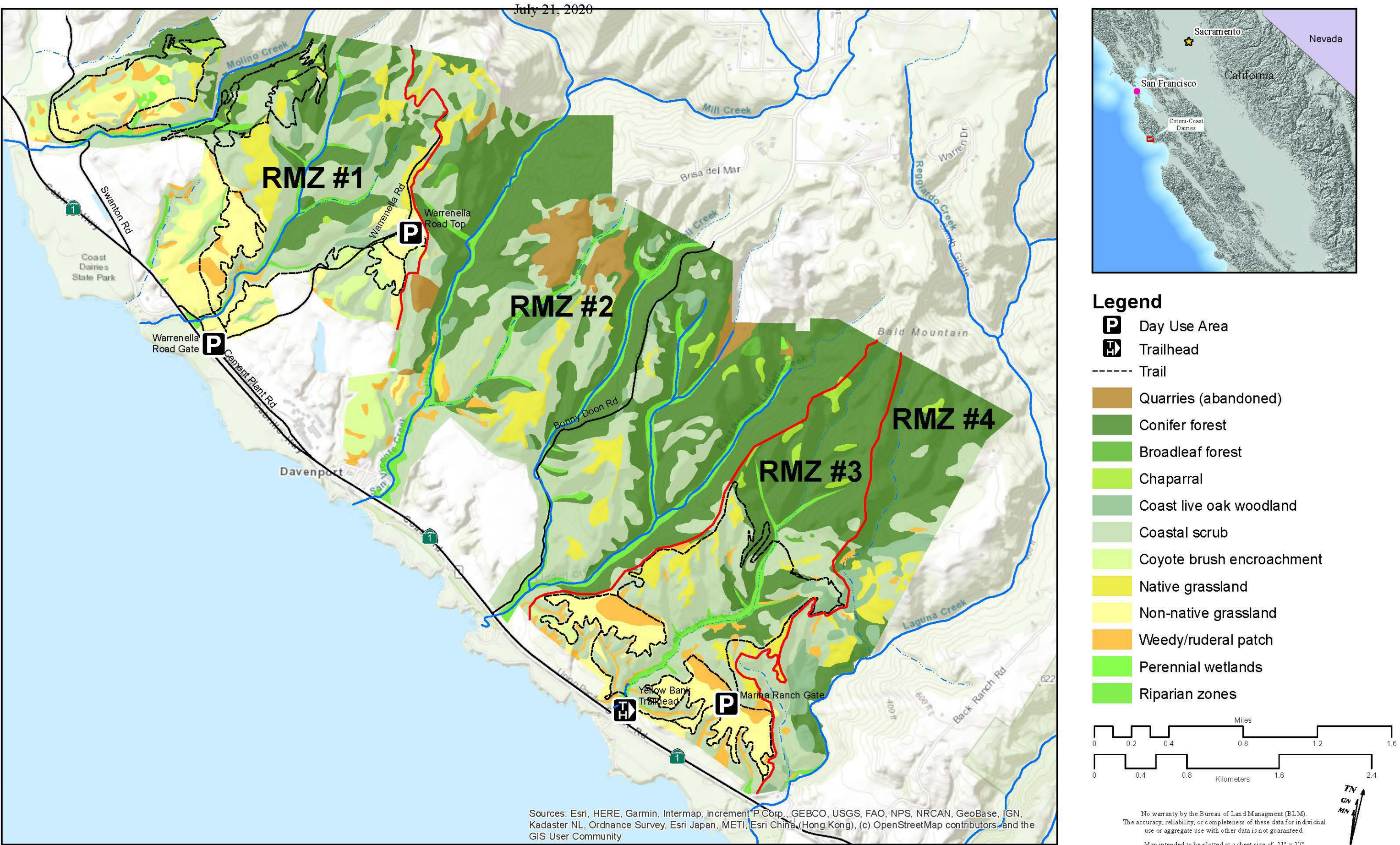
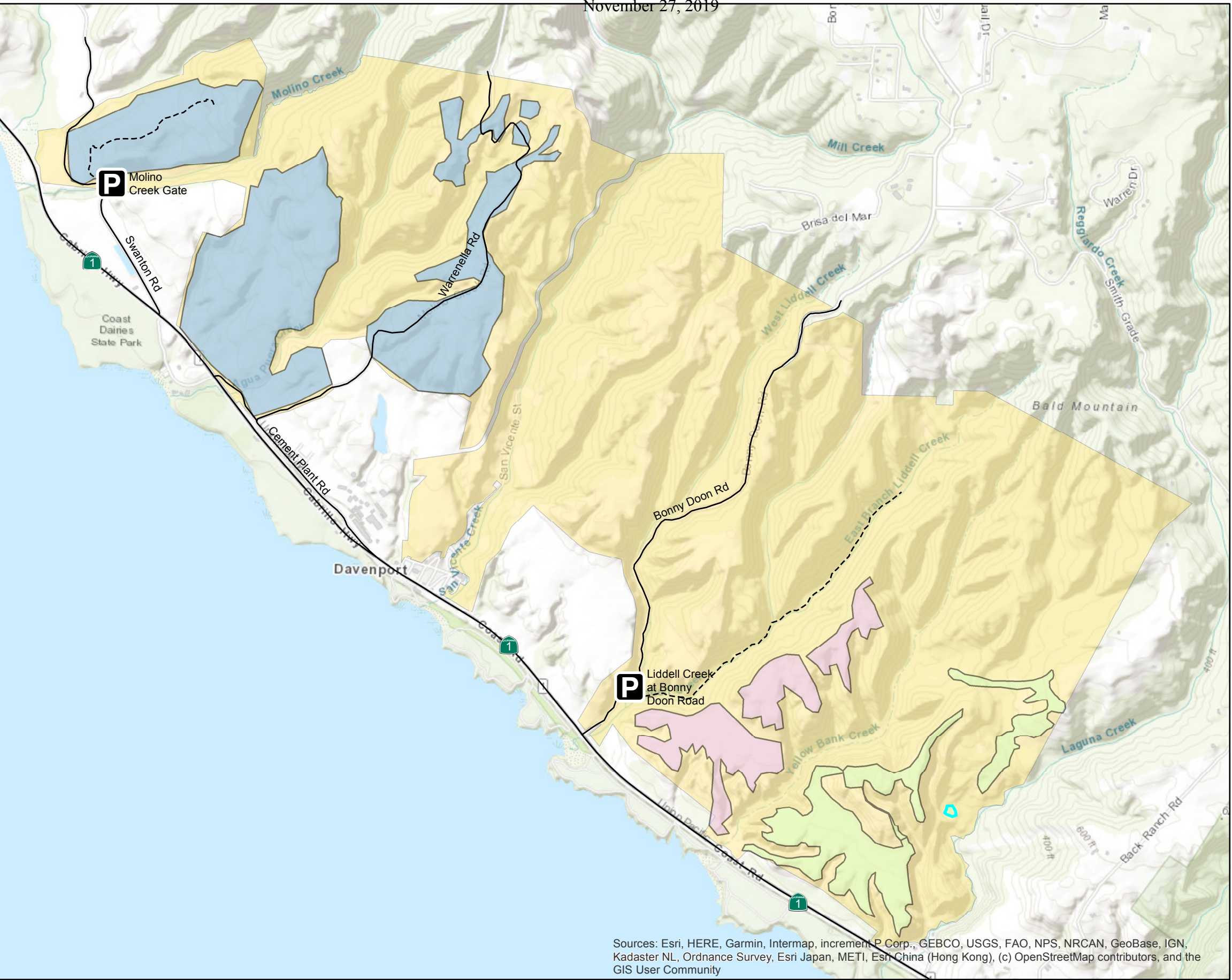


Figure 8A: Cotoni-Coast Dairies Recreation Management Zones and Livestock Grazing Alternative A



Author: Alexander Mairs



Legend

- Day Use Area
- Trail
- Big Ranch Newton
- Yellow Bank
- Delones Marina
- Bureau of Land Management

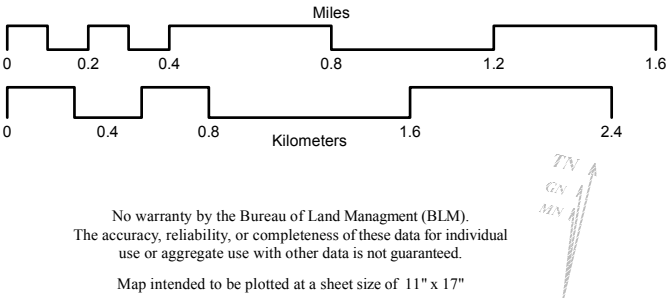
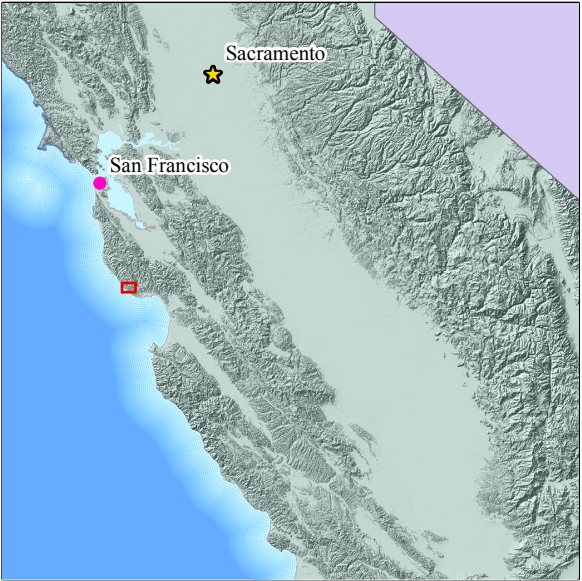
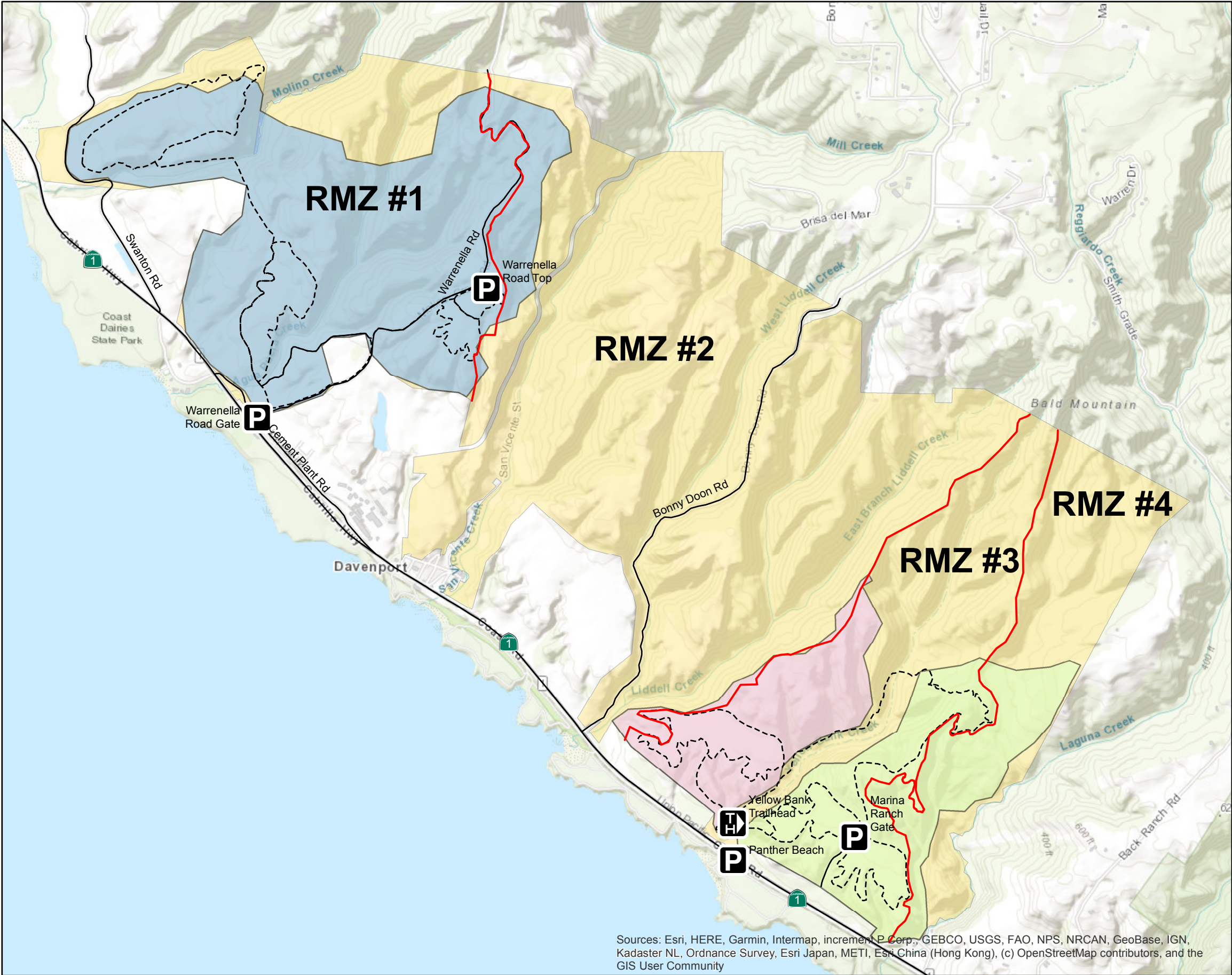


Figure 8B: Cotoni-Coast Dairies Recreation Management Zones and Livestock Grazing Alternative B



Legend

- Day Use Area
- Trailhead
- Trail
- Big Ranch Newtown
- Yellow Bank
- Delones Marina
- Bureau of Land Management

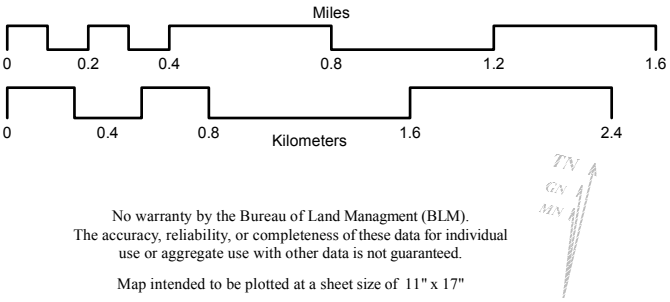
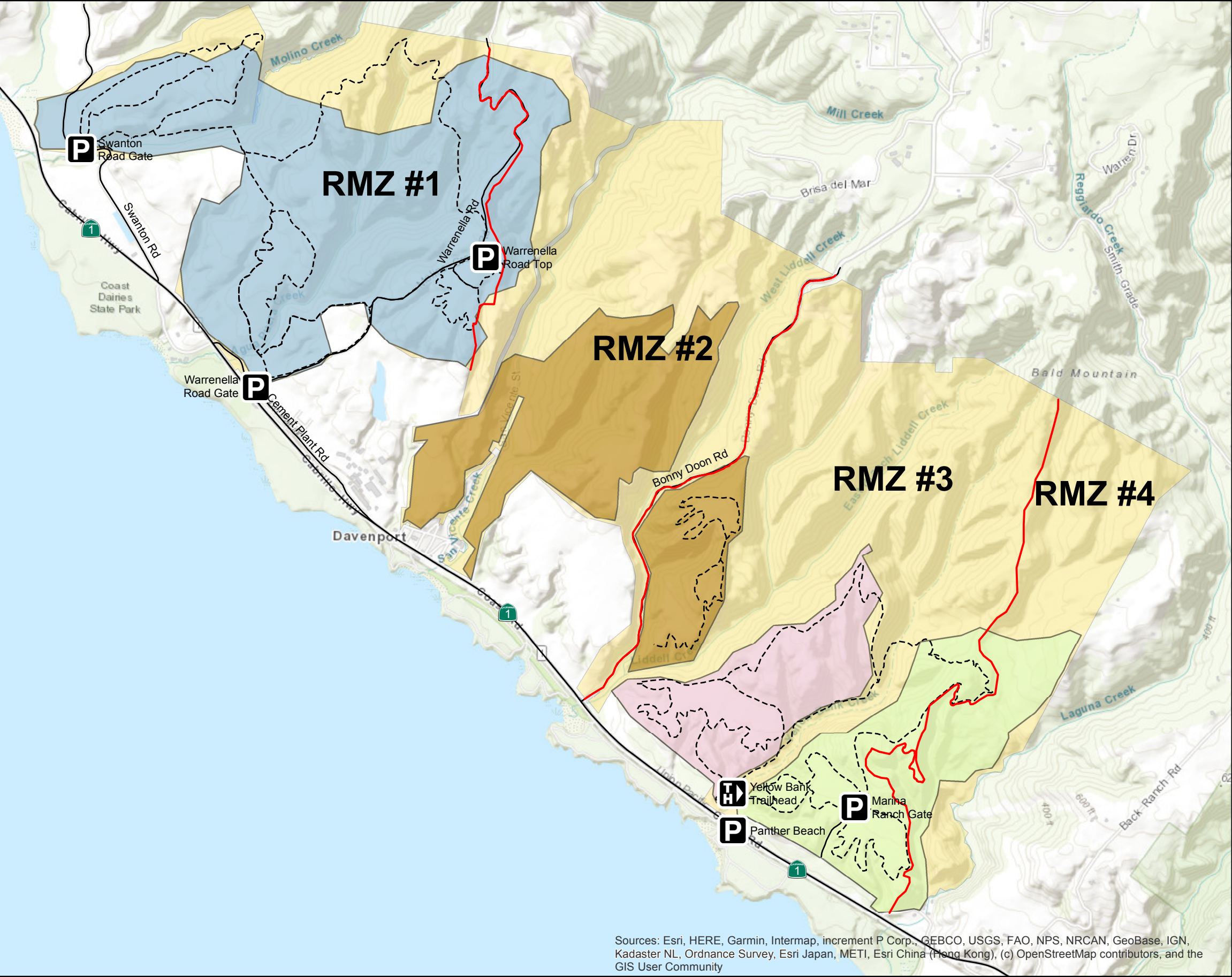


Figure 8C: Cotoni-Coast Dairies Recreation Management Zones and Livestock Grazing Alternative C



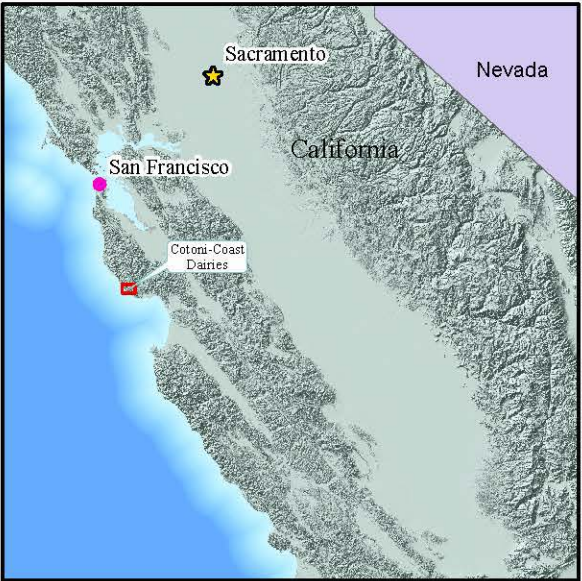
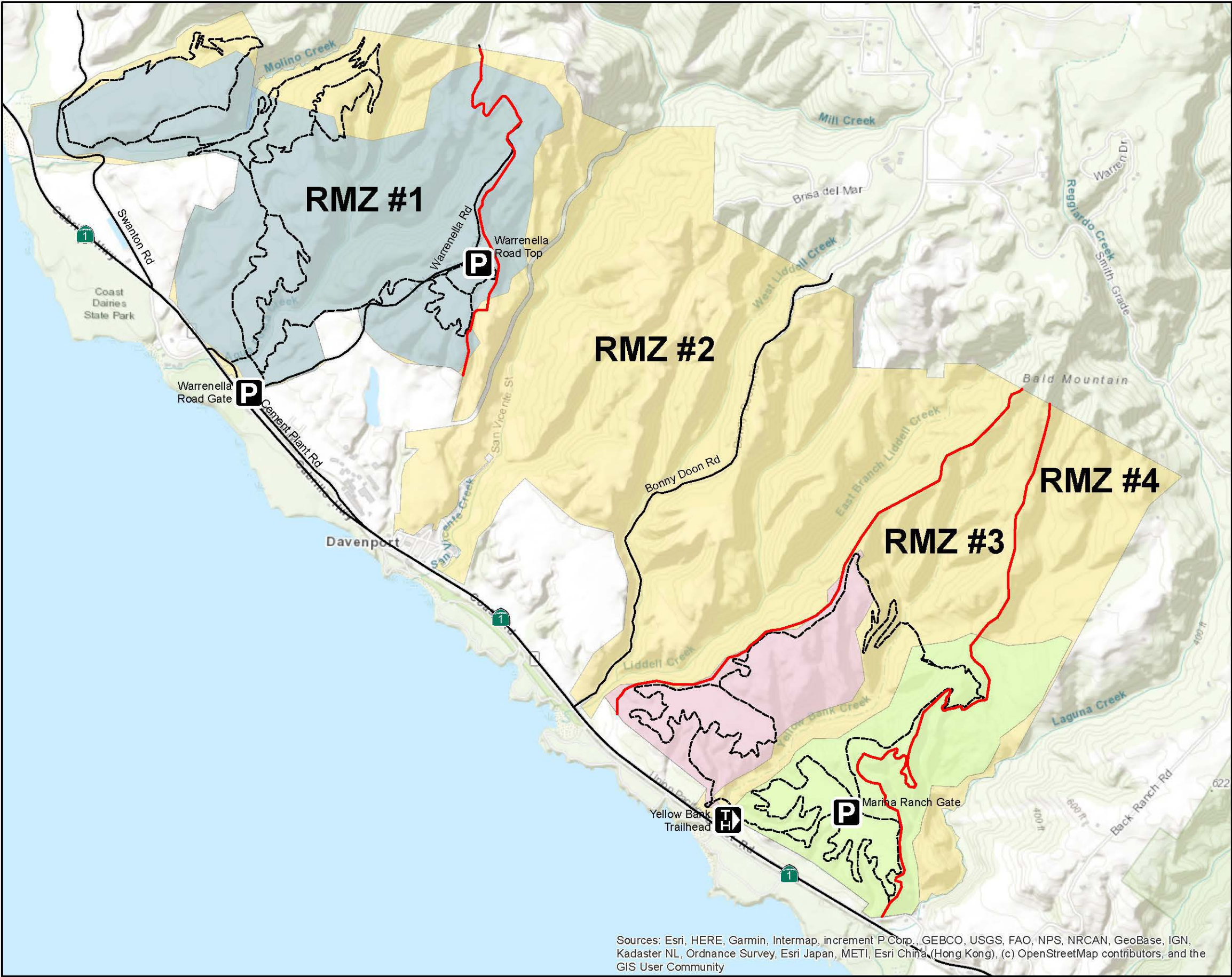
Legend

- P** Day Use Area
- TH** Trailhead
- Trail
- Big Ranch Newtown
- Liddell
- Yellow Bank
- Delones Marina
- Bureau of Land Management



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use or aggregate use with other data is not guaranteed.
Map intended to be plotted at a sheet size of 11" x 17"

Figure 8D: Cotoni-Coast Dairies Recreation Management Zones and Livestock Grazing Alternative D



Legend

- P** Day Use Area
- H** Trailhead
- Trail
- Big Ranch Newtown
- Yellow Bank
- Delones Marina
- Bureau of Land Management

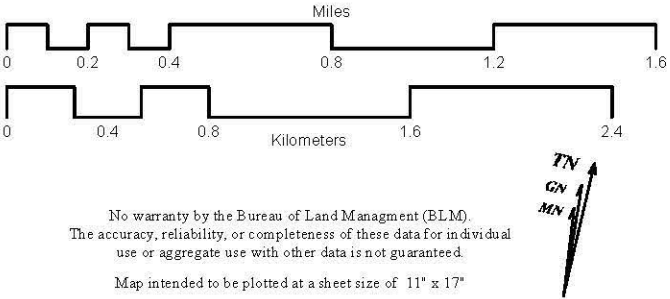
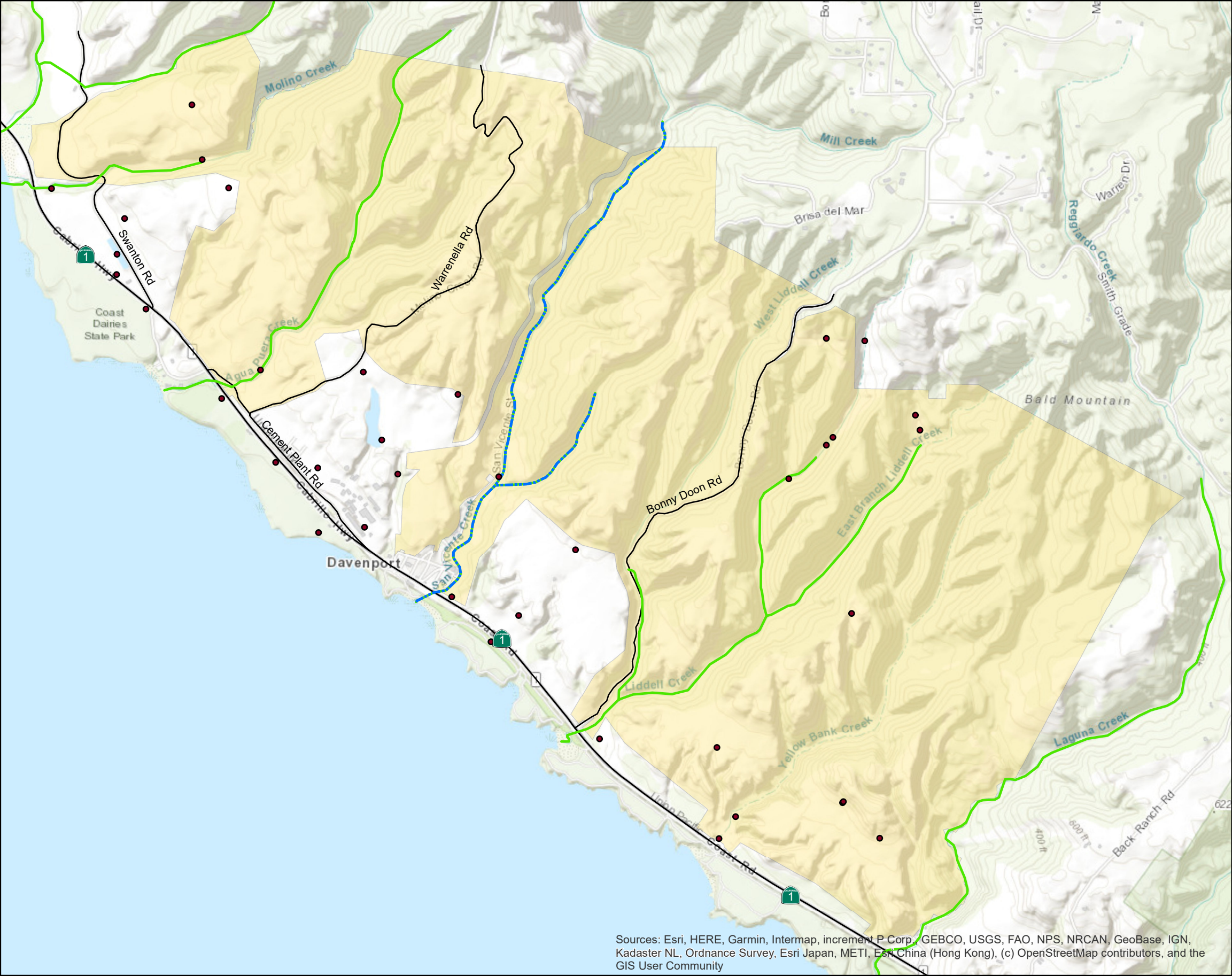
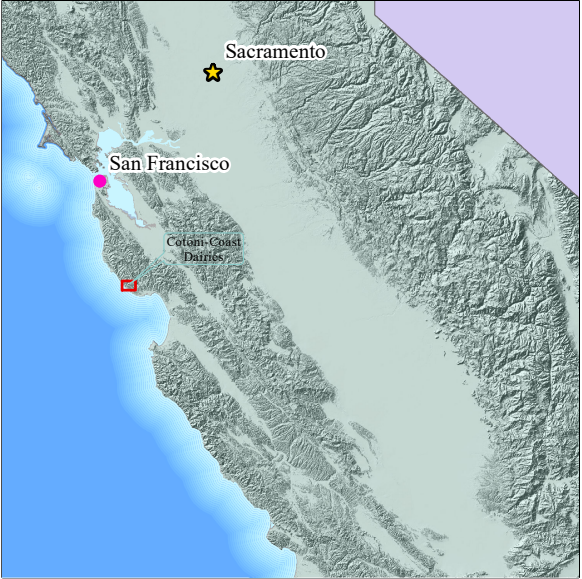


Figure 9: Cotoni-Coast Dairies Special-Status Wildlife Locations

January 22, 2020

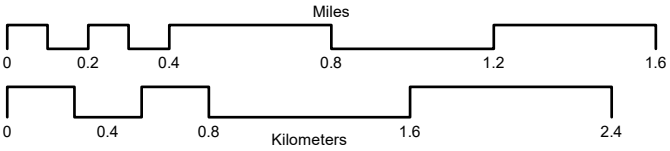


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Legend

- California Red-Legged Frog Known Occurence
- Steelhead Critical Habitat
- - - Coho Critical Habitat
- Roads
- Bureau of Land Management

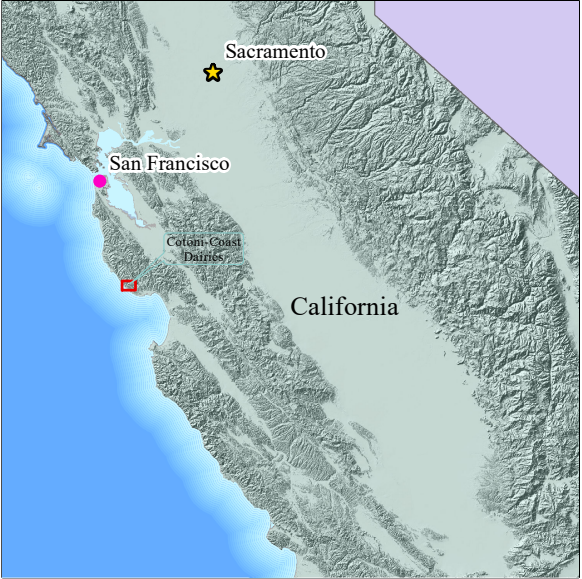
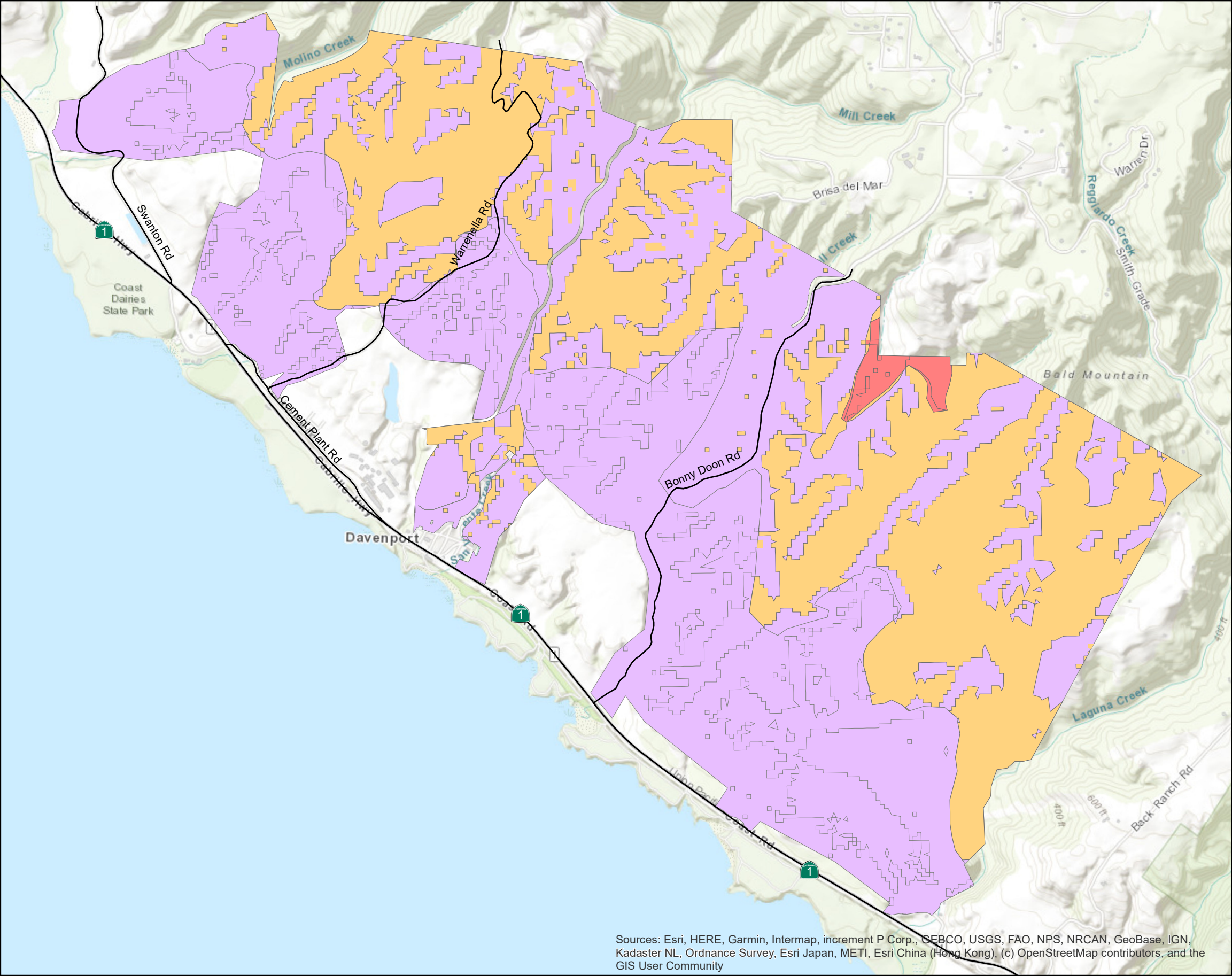


No warranty by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

Map intended to be plotted at a sheet size of 11" x 17"

Figure 10: Cotoni-Coast Dairies Visual Resource Inventory

January 22, 2020



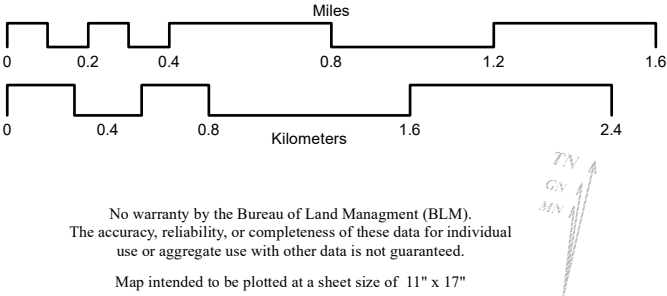
Legend

VRI Class Code

- VRI Class II
- VRI Class III
- VRI Class IV

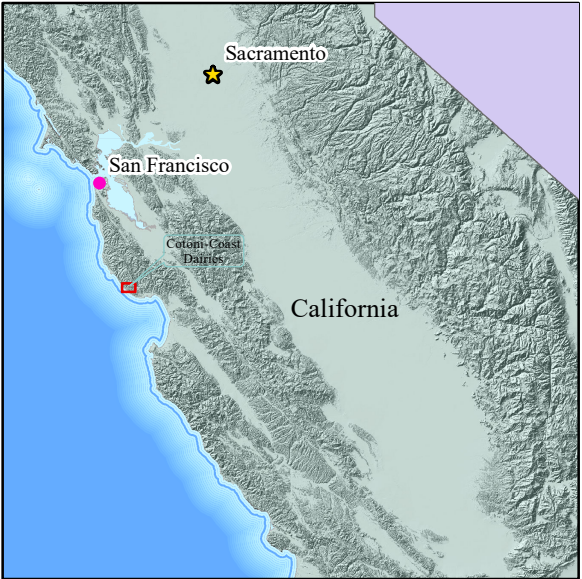
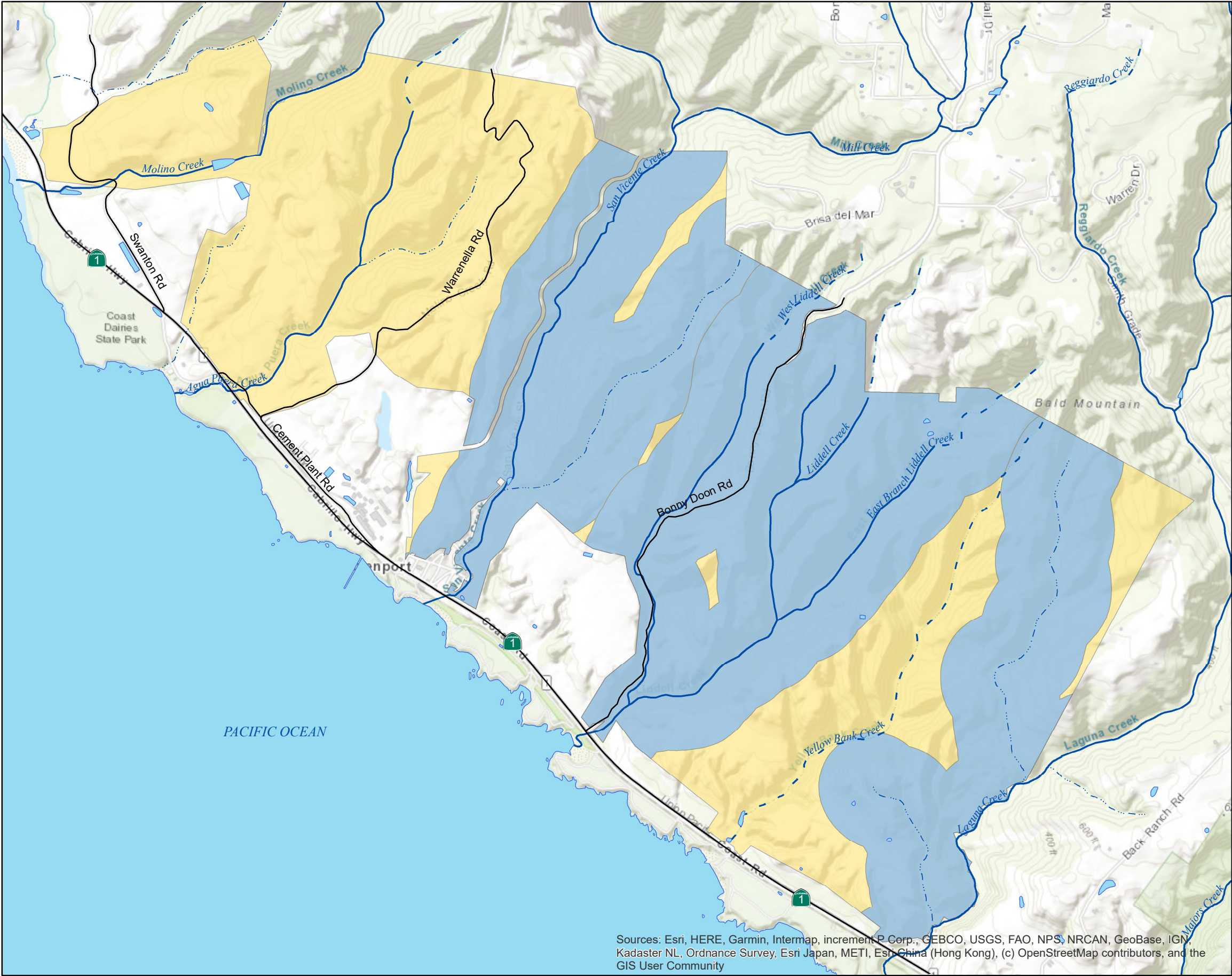
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., CEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Author: Alexander Mairs



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use or aggregate use with other data is not guaranteed.
Map intended to be plotted at a sheet size of 11" x 17"

Figure 11: Cotoni-Coast Dairies Wild & Scenic River Study



Legend

 River Segment Buffer (0.25 mi.)

 Bureau of Land Management

Miles
0 0.2 0.4 0.8 1.2 1.6

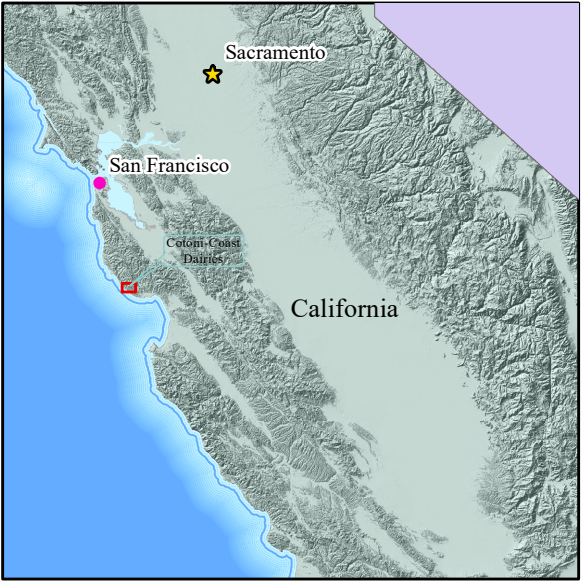
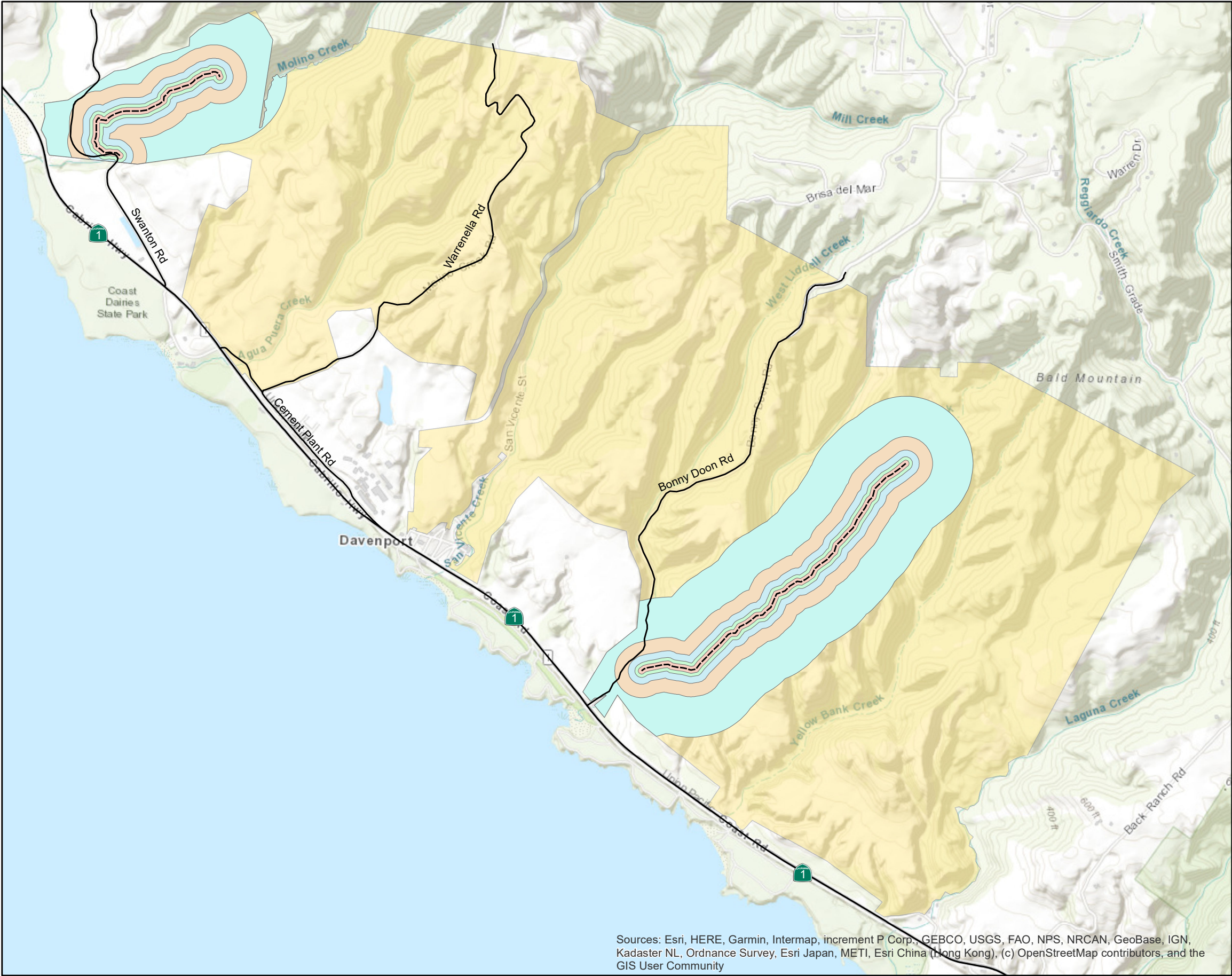
Kilometers
0 0.4 0.8 1.6 2.4

No warranty by the Bureau of Land Management (BLM).
The accuracy, reliability, or completeness of these data for individual
use or aggregate use with other data is not guaranteed.

Map intended to be plotted at a sheet size of 11" x 17"



Figure 12A: Cotoni-Coast Dairies Trail Wildlife Disturbance Buffers
Alternative A



Legend

25m Buffer
52 acres

50m Buffer
106 acres

100m Buffer
216 acres

200m Buffer
449 acres

500m Buffer
1097 acres

Bureau of Land Management

Miles
0 0.2 0.4 0.8 1.2 1.6

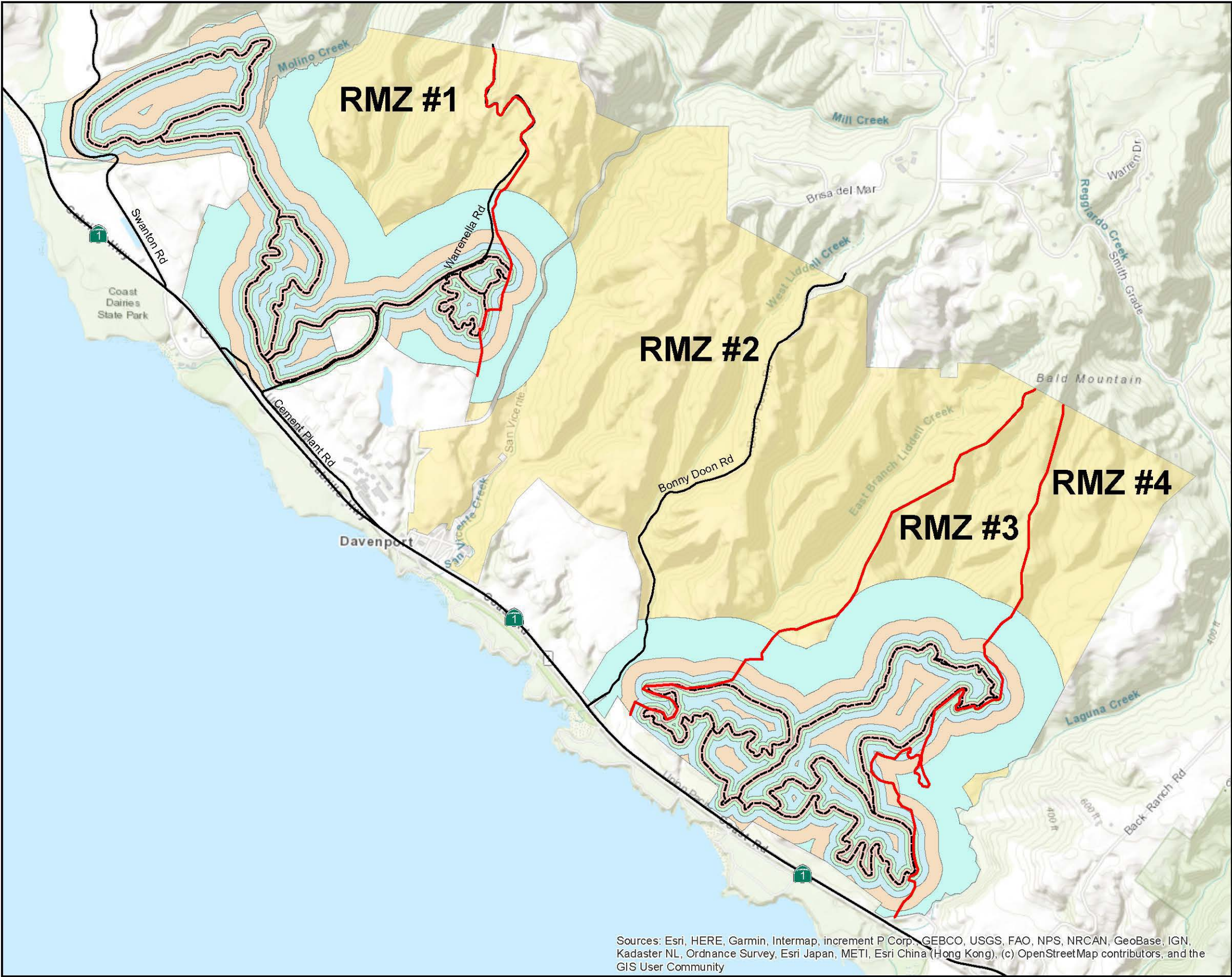
Kilometers
0 0.4 0.8 1.6 2.4

No warranty by the Bureau of Land Management (BLM).
The accuracy, reliability, or completeness of these data for individual
use or aggregate use with other data is not guaranteed.

Map intended to be plotted at a sheet size of 11" x 17"

TN
GN
MN

Figure 12B: Cotoni-Coast Dairies Trail Wildlife Disturbance Buffers (Alternative B)



Legend

25m Buffer
347 acres

50m Buffer
653 acres

100m Buffer
1093 acres

200m Buffer
1603 acres

500m Buffer
2484 acres

Bureau of Land Management

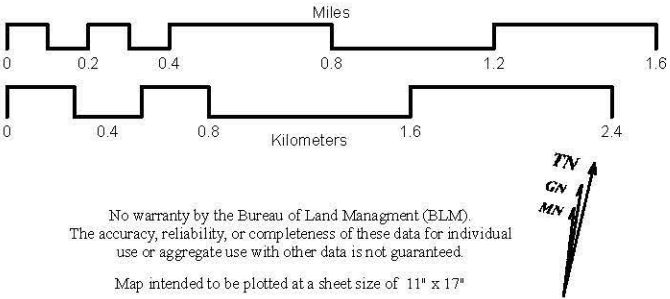
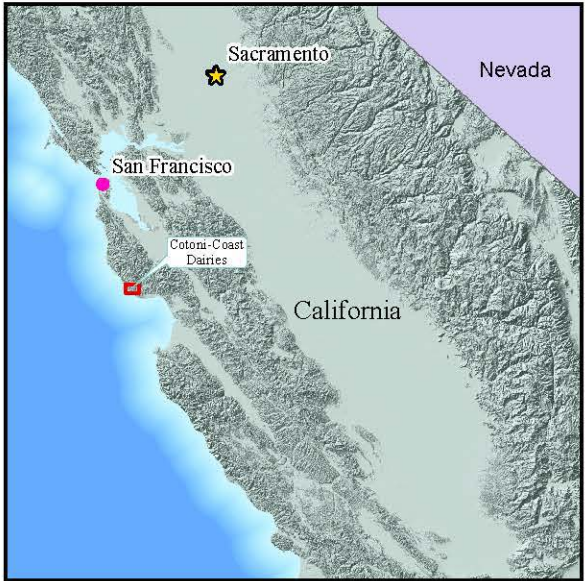
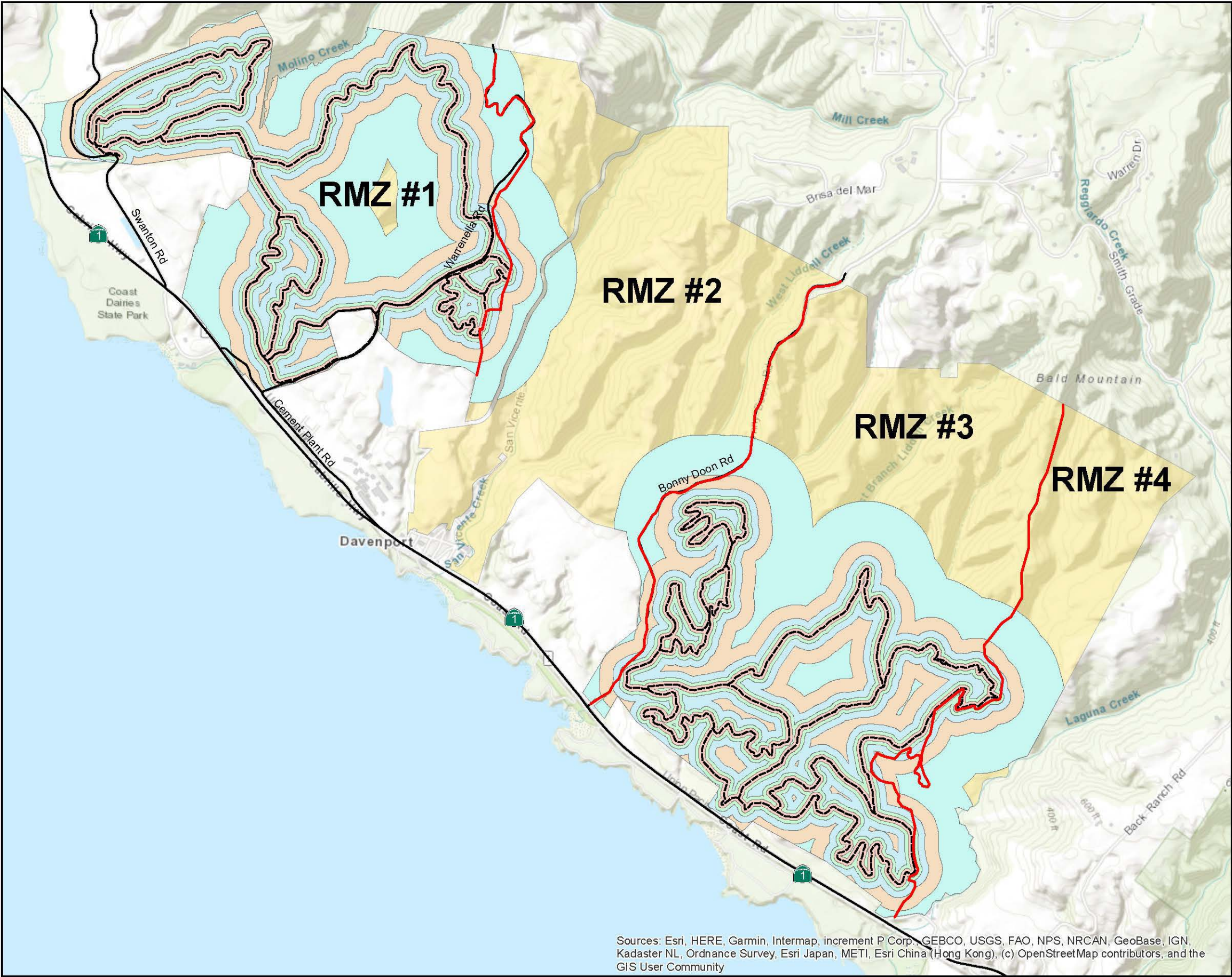


Figure 12C: Cotoni-Coast Dairies Trail Wildlife Disturbance Buffers (Alternative C)



Legend

25m Buffer
507 acres

50m Buffer
943 acres

100m Buffer
1615 acres

200m Buffer
2364 acres

500m Buffer
3496 acres

Bureau of Land Management

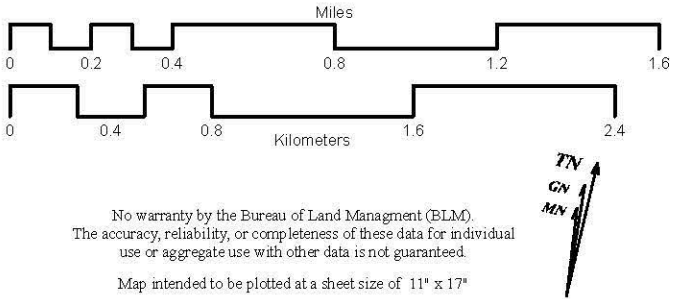
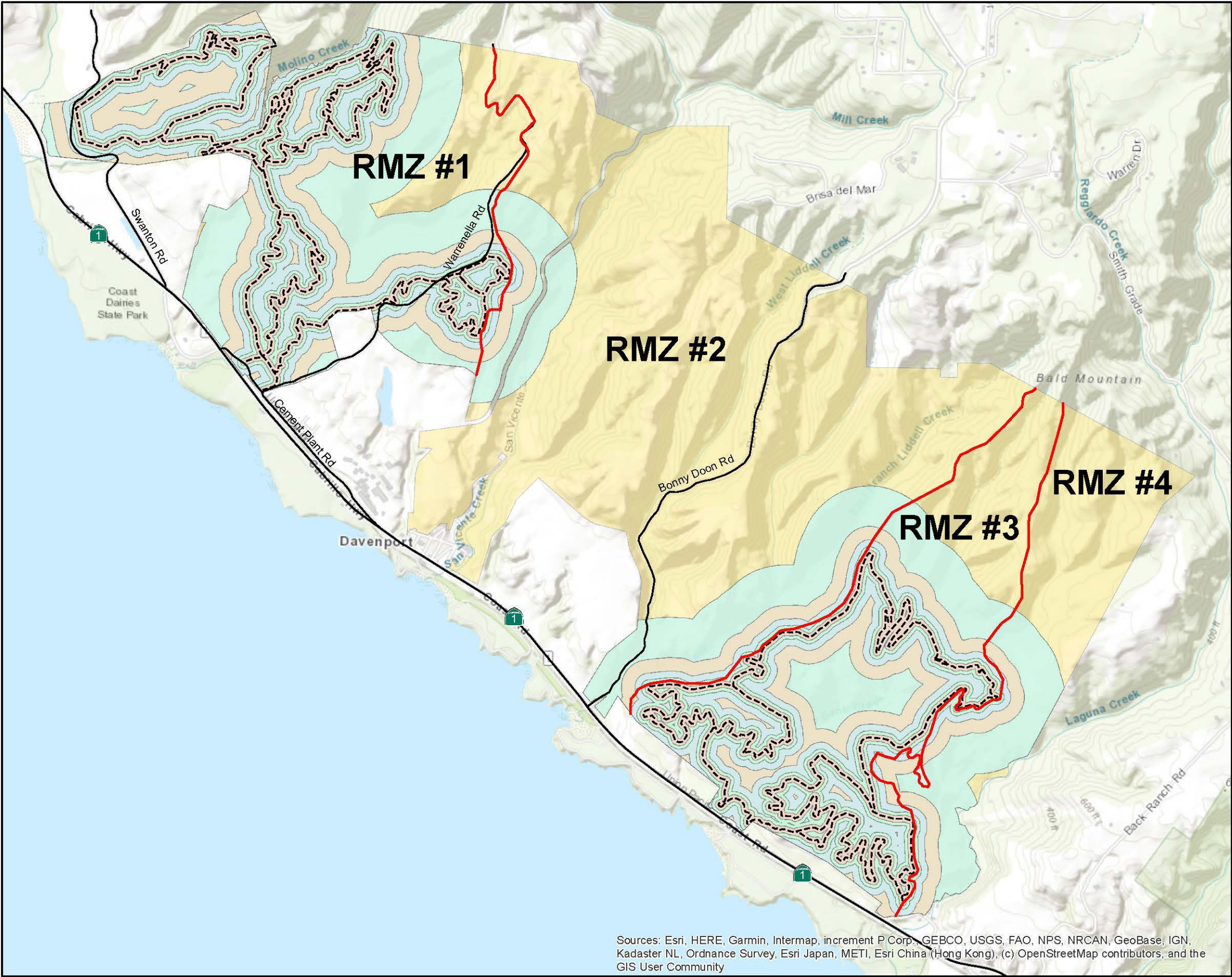
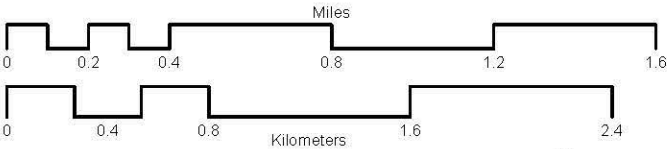


Figure 12D: Cotoni-Coast Dairies Trail Wildlife Disturbance Buffers
Alternative D



Legend

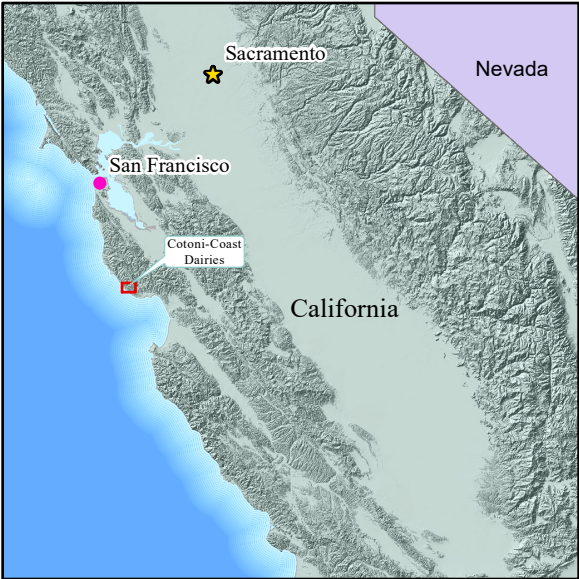
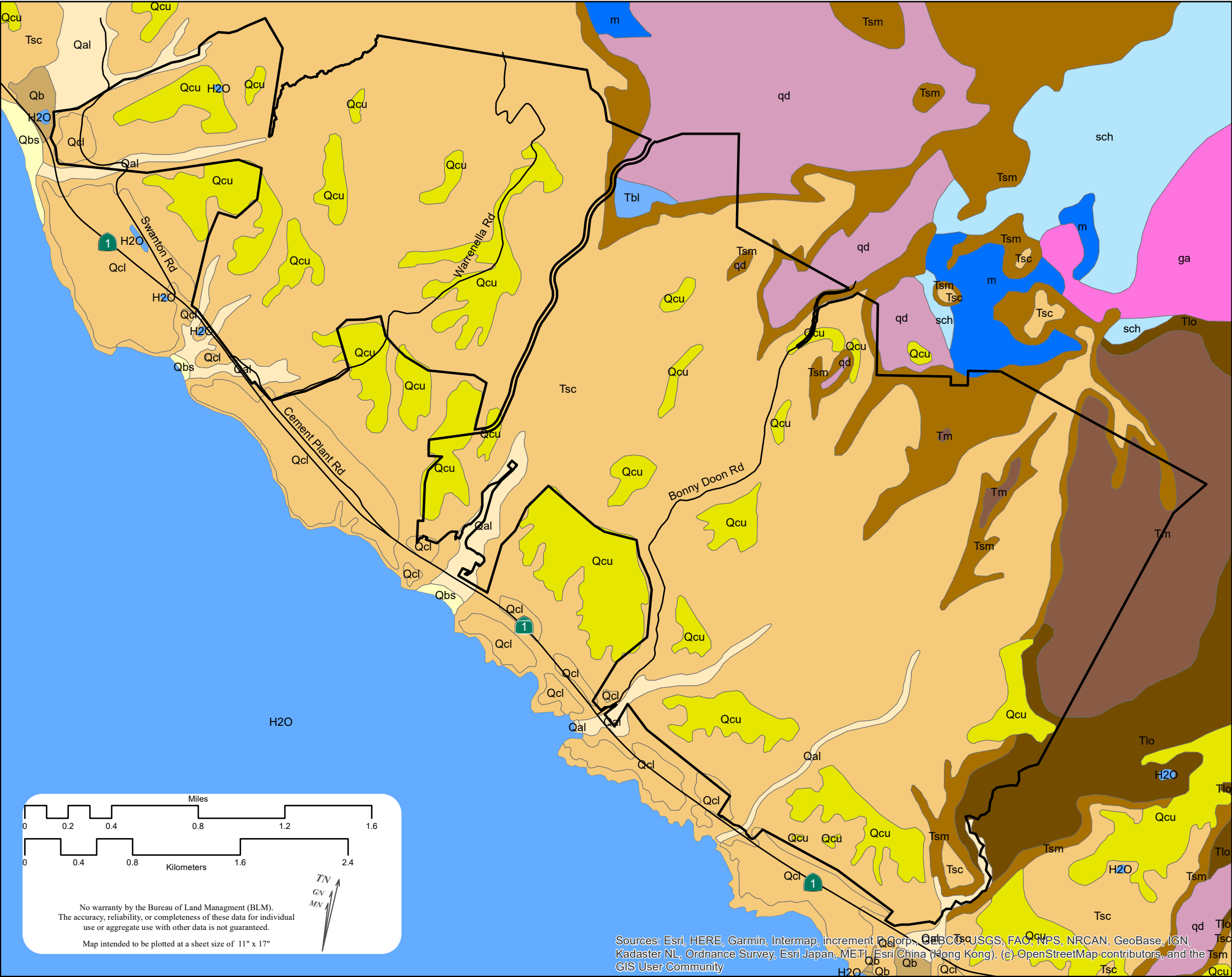
- Trails
- 25m Buffer**
486 acres
- 50m Buffer**
866 acres
- 100m Buffer**
1404 acres
- 200m Buffer**
1993 acres
- 500m Buffer**
3017 acres
- Bureau of Land Management



No warranty by the Bureau of Land Management (BLM).
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use or aggregate use with other data is not guaranteed.
Map intended to be plotted at a sheet size of 11" x 17"

Figure 13: Cotoni-Coast Dairies Geology

February 7, 2020

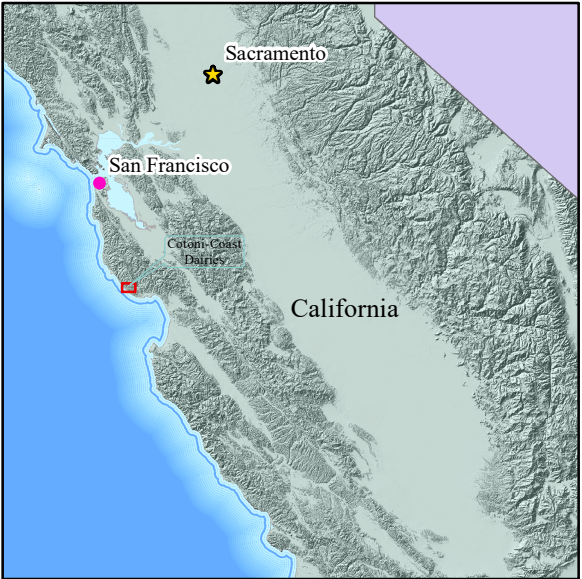
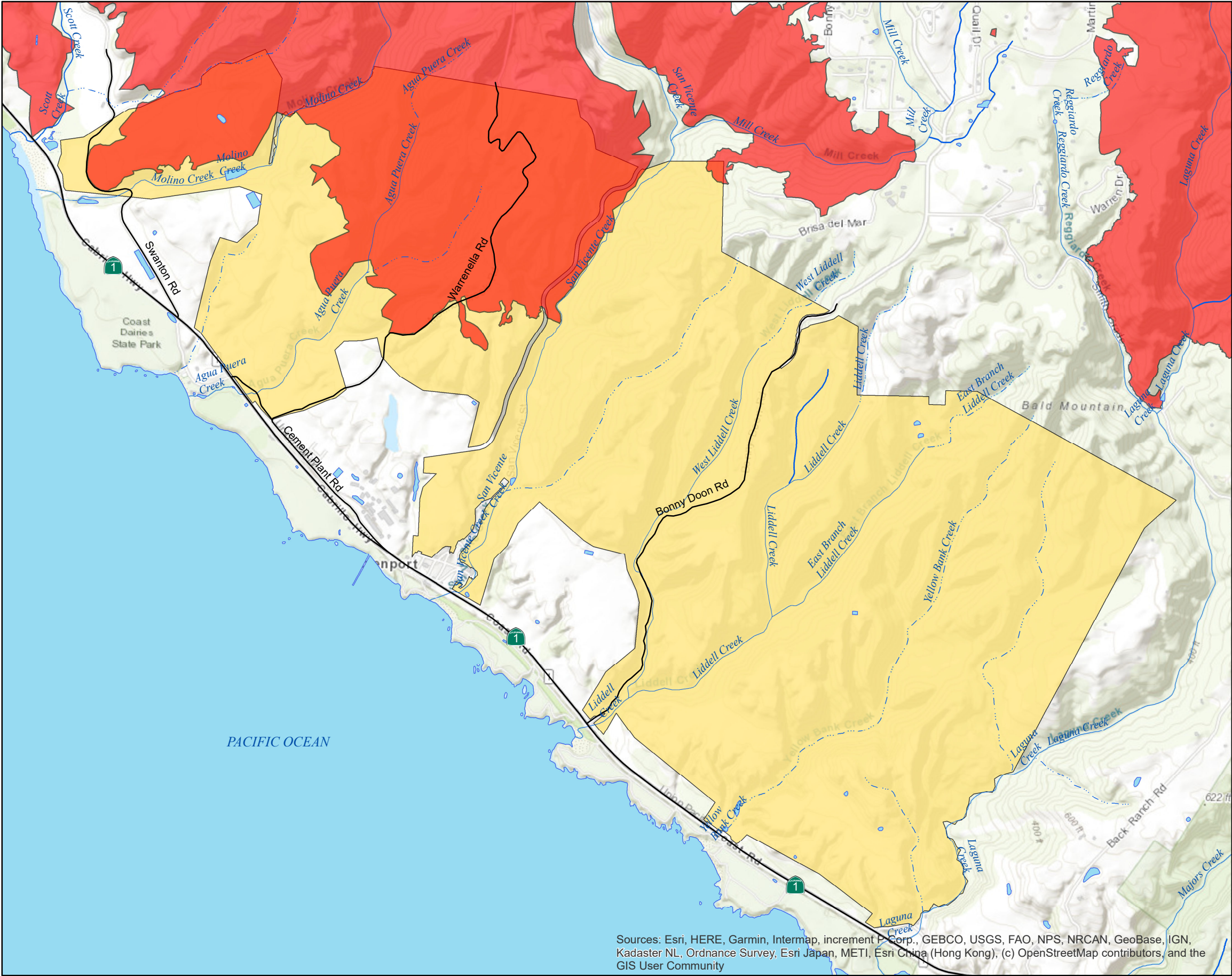


Legend

Stratigraphic Units

- H2O
- Qal - Alluvial deposits
- Qb - Basin deposits
- Qbs - Beach sand
- Qcl - Lowest emergent coastal terrace
- Qcu - Coastal terrace deposits
- Tbl - Lower sandstone member
- Tlo - Lompico Sandstone
- Tm - Monterey Formation
- Tsc - Santa Cruz Mudstone
- Tsm - Santa Margarita Sandstone
- ga - Granite & adamellite
- m - Marble
- qd - Quartz diorite
- sch - Metasedimentary rocks
- Bureau of Land Management

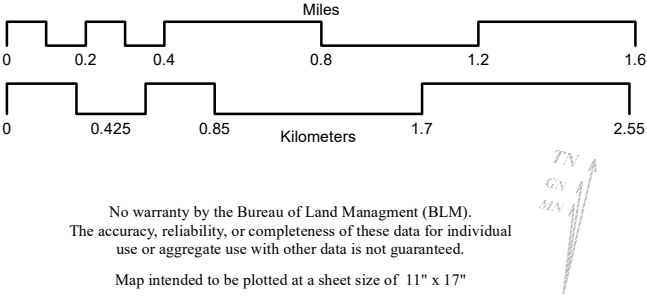
Figure 14: Cotoni-Coast Dairies - CZU Lightning Complex Burn Area



Legend

CZU Lightning Complex

Bureau of Land Management



COTONI-COAST DAIRIES DRAFT CONCEPTS

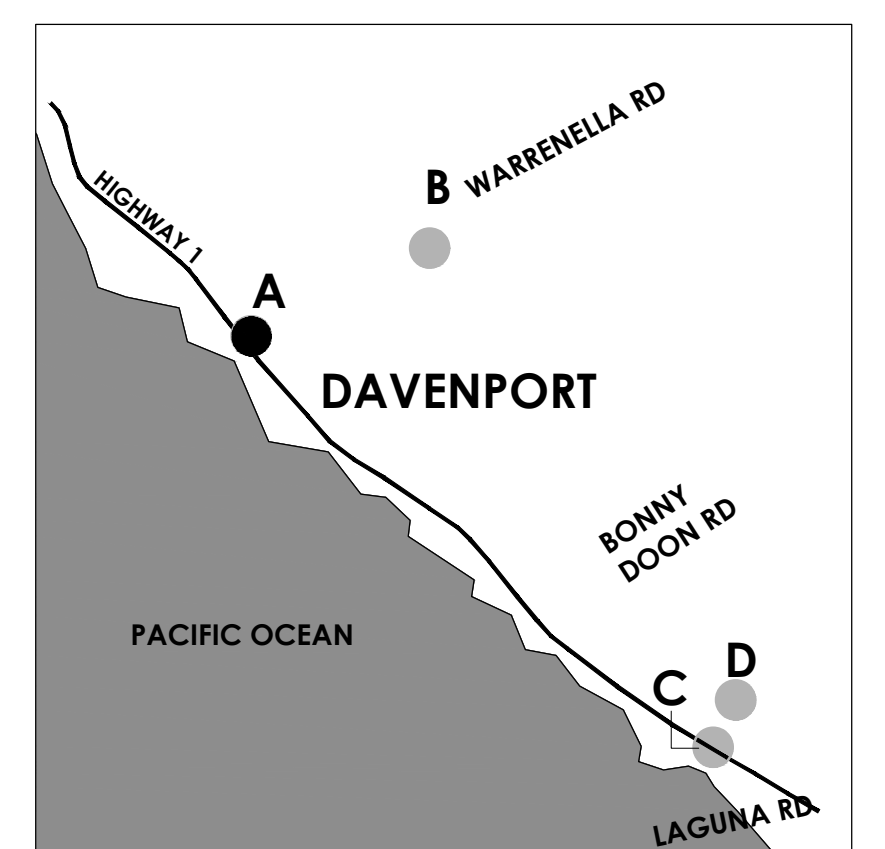
LEGEND:

- GRAVEL BASE
- TRAIL OPPORTUNITY
- RESTROOM
- PICNIC SHELTER
- OVERLOOK
- CONTOUR LINES
- CREEK ALIGNMENT
- FENCING**
2.00 ACRES (86,948 SF)
- GRADED AREA (PARKING)**
1.62 ACRES (70,628 SF)

CONTOUR INTERVAL: 5'

PARKING CAPACITY:
69 STANDARD SPACES

KEYMAP:



COTONI-COAST DAIRIES DRAFT CONCEPTS



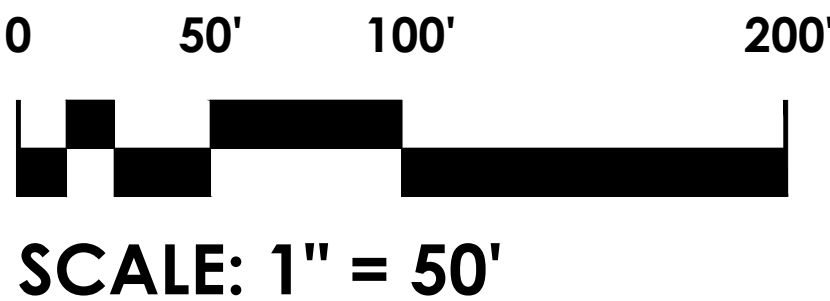
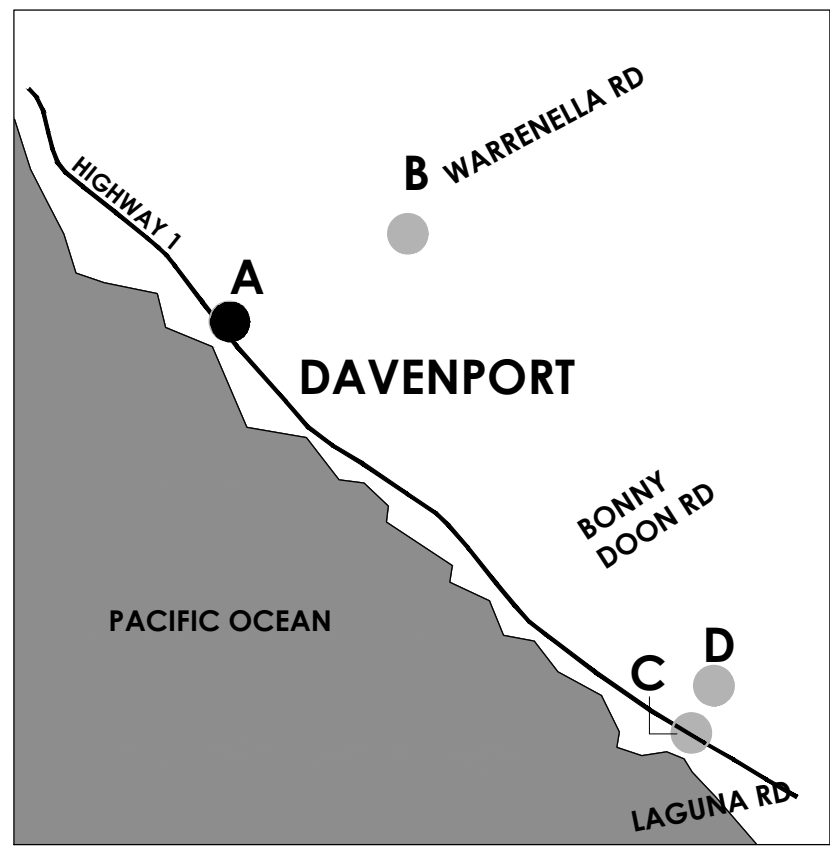
LEGEND:

- GRAVEL BASE
- TRAIL OPPORTUNITY
- RESTROOM
- PICNIC SHELTER
- OVERLOOK
- CONTOUR LINES
- CREEK ALIGNMENT
- FENCING
3.02 ACRES (131,626 SF)
- GRADED AREA (PARKING)
1.61 ACRES (70,223 SF)

CONTOUR INTERVAL: 5'

PARKING CAPACITY:
40 STANDARD SPACES
4 EQUESTRIAN SPACES

KEYMAP:



DRAFT CONCEPT: WARRENELLA ROAD GATE

Cotoni-Coast Dairies Trailhead Feasibility Refinements

NOVEMBER 2019

A.2

COTONI-COAST DAIRIES DRAFT CONCEPTS



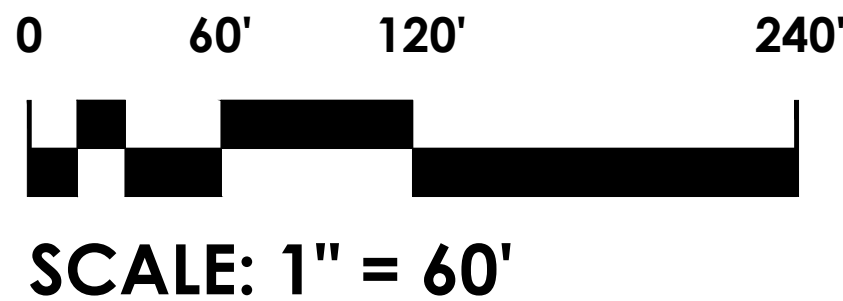
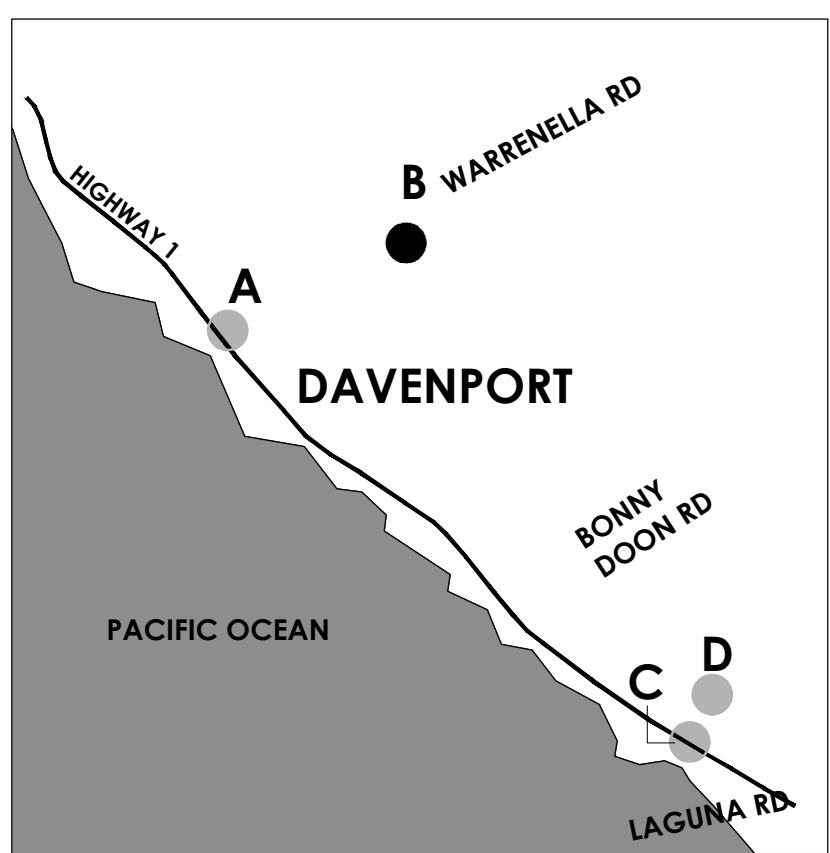
LEGEND:

- GRAVEL BASE
- TRAIL OPPORTUNITY
- RESTROOM
- PICNIC SHELTER
- OVERLOOK
- CONTOUR LINES
- CREEK ALIGNMENT
- FENCING
4.21 ACRES (183,343 SF)
- GRADED AREA (PARKING)
1.66 ACRES (72,360 SF)

CONTOUR INTERVAL: 5'

PARKING CAPACITY:
48 STANDARD SPACES

KEYMAP:



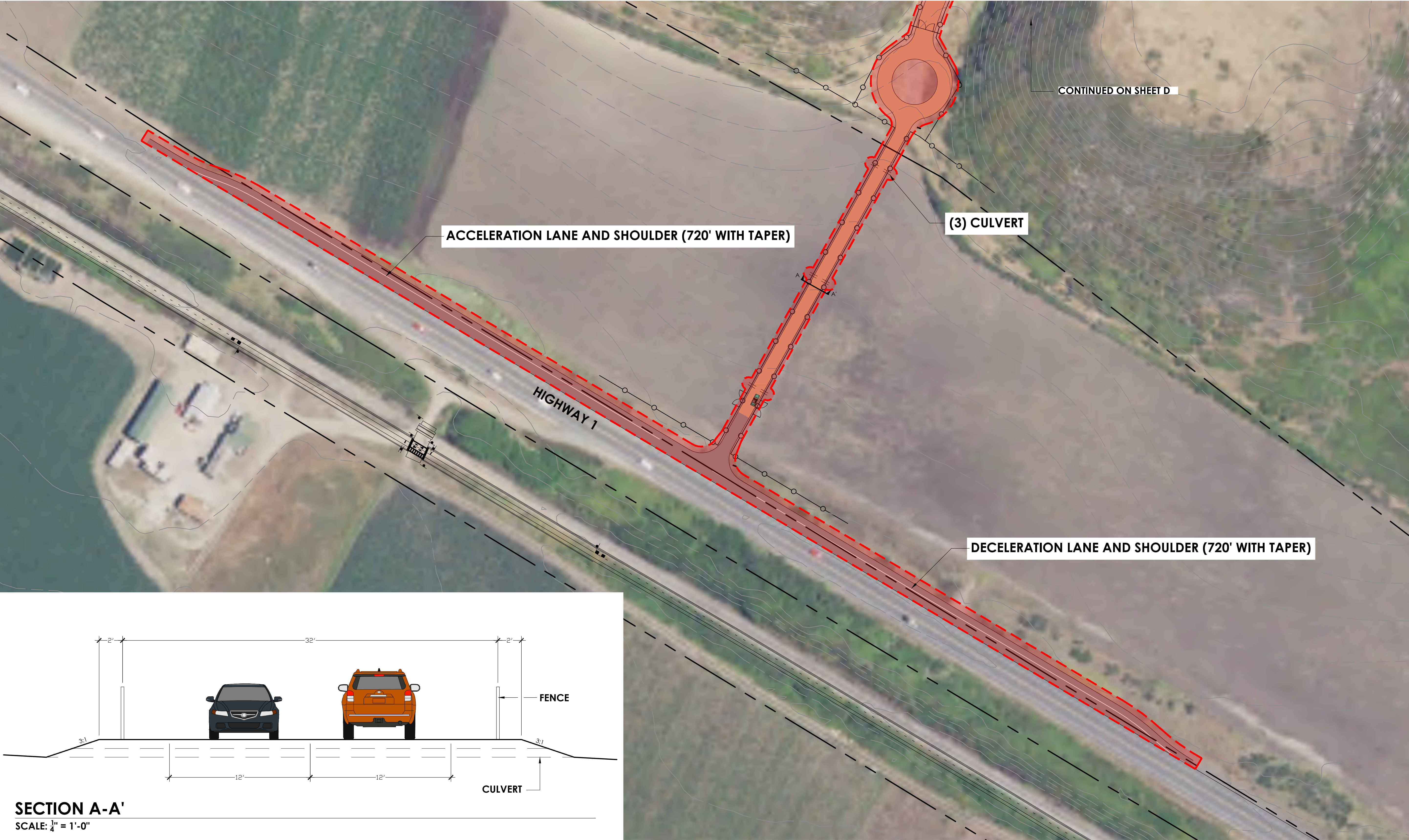
DRAFT CONCEPT: WARRENELLA ROAD-TOP

Cotoni-Coast Dairies Trailhead Feasibility Refinements

NOVEMBER 2019

B

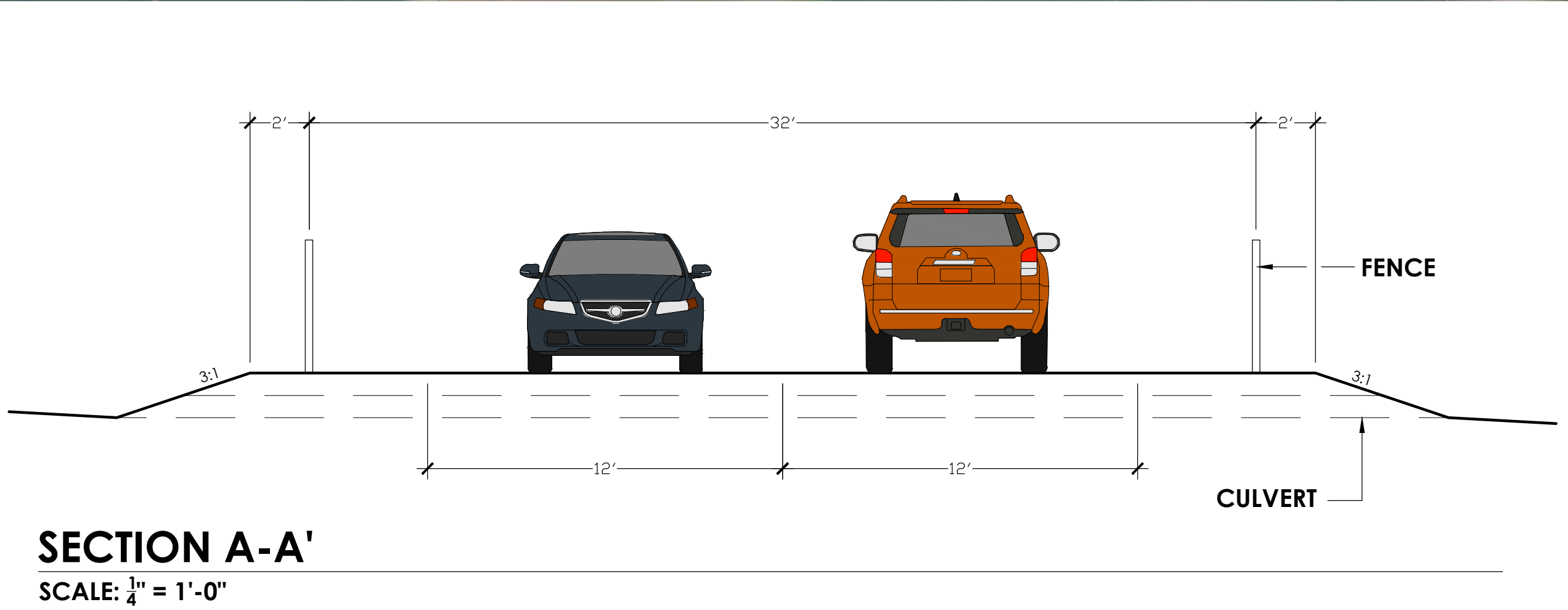
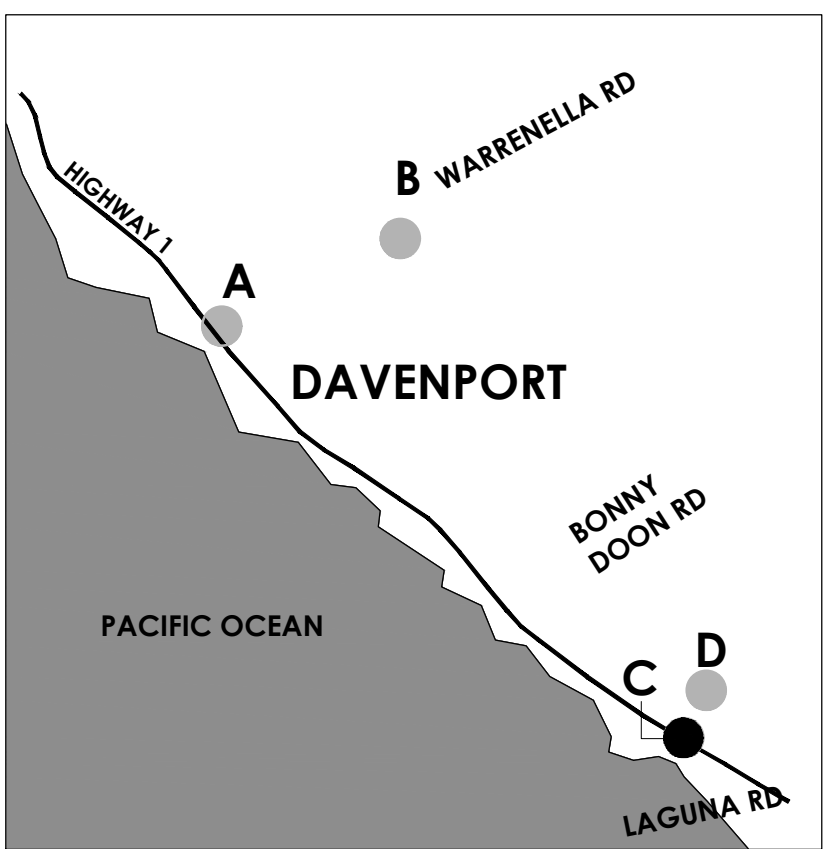
COTONI-COAST DAIRIES DRAFT CONCEPTS



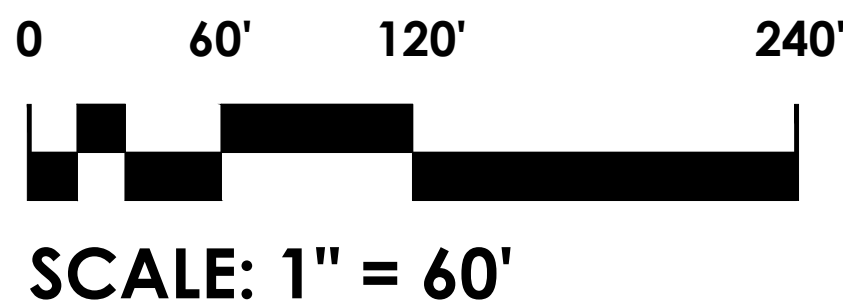
LEGEND:

- GRAVEL BASE
- ASPHALT
- TRAIL OPPORTUNITY
- RESTROOM
- PICNIC SHELTER
- OVERLOOK
- CONTOUR LINES
- CREEK ALIGNMENT
- FENCING
TOTAL: 4.21 ACRES (183,343 SF)
BREAKDOWN:
AGRICULTURAL ZONE: .20 AC (8,765 SF)
ROUNDBOUT TO TRAILHEAD: 1.71 AC (74,395 SF)
TRAILHEAD PARKING: 1.82 AC (79,440 SF)
- GRADED AREA (PARKING & ENTRY DRIVE)
4.57 ACRES (199,204 SF)
- CONTOUR INTERVAL: 5'

KEYMAP:



SECTION A-A'
SCALE: 1/4" = 1'-0"



DRAFT CONCEPT: MARINA RANCH GATE

Cotoni-Coast Dairies Trailhead Feasibility Refinements

NOVEMBER 2019

C

COTONI-COAST DAIRIES DRAFT CONCEPTS



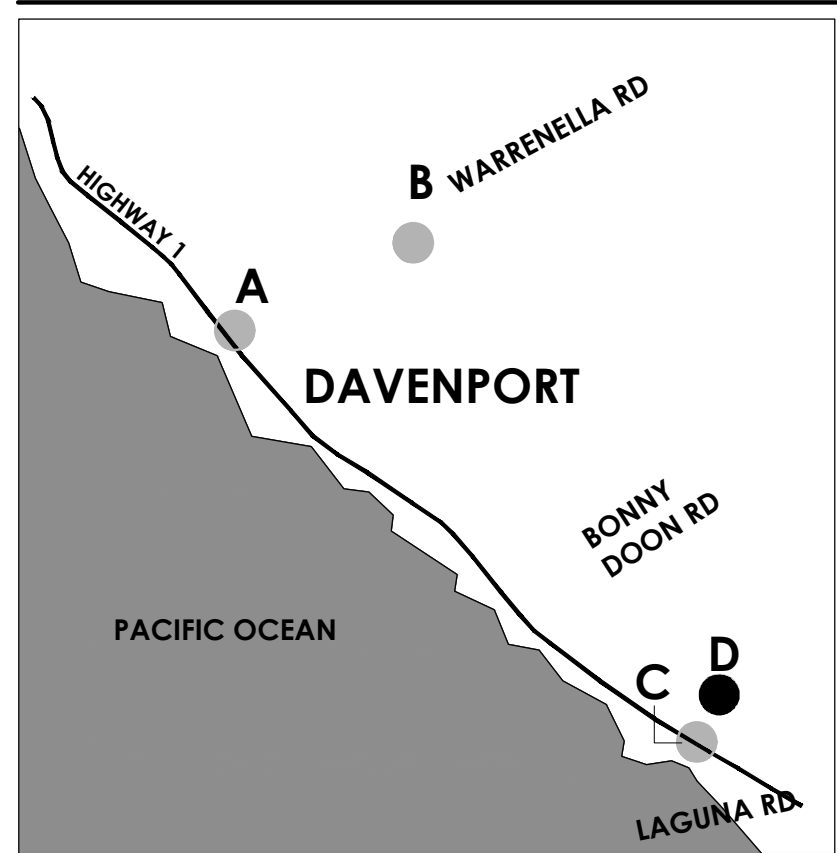
LEGEND:

- GRAVEL BASE
- TRAIL OPPORTUNITY
- RESTROOM
- PICNIC SHELTER
- OVERLOOK
- CONTOUR LINES
- CREEK ALIGNMENT
- FENCING**
TOTAL: 4.21 ACRES (183,343 SF)
BREAKDOWN:
AGRICULTURAL ZONE: .20 AC (8,765 SF)
ROUNDABOUT TO TRAILHEAD: 1.71 AC (74,395 SF)
TRAILHEAD PARKING: 1.82 AC (79,440 SF)
- GRADED AREA (PARKING & ENTRY DRIVE)**
4.57 ACRES (199,204 SF)

CONTOUR INTERVAL: 5'

PARKING CAPACITY:
42 STANDARD SPACES
4 EQUESTRIAN SPACES

KEYMAP:



COTONI-COAST DAIRIES DRAFT CONCEPTS

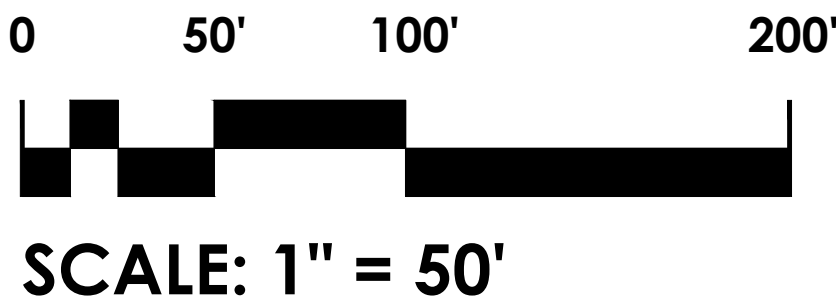
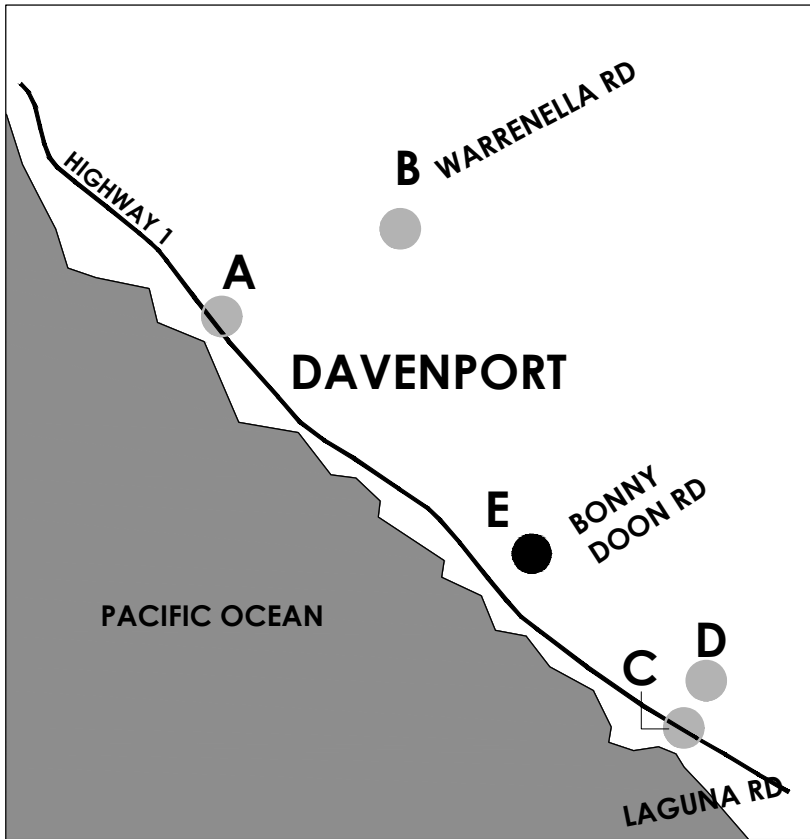


LEGEND:

- GRAVEL BASE
- TRAIL OPPORTUNITY
- RESTROOM
- TOPOGRAPHY
- CREEK ALIGNMENT
- GRADED AREA (PARKING)
0.40 ACRES (17,627 SF)

CONTOUR INTERVAL: 5'
PARKING CAPACITY: 22 SPACES

KEYMAP:

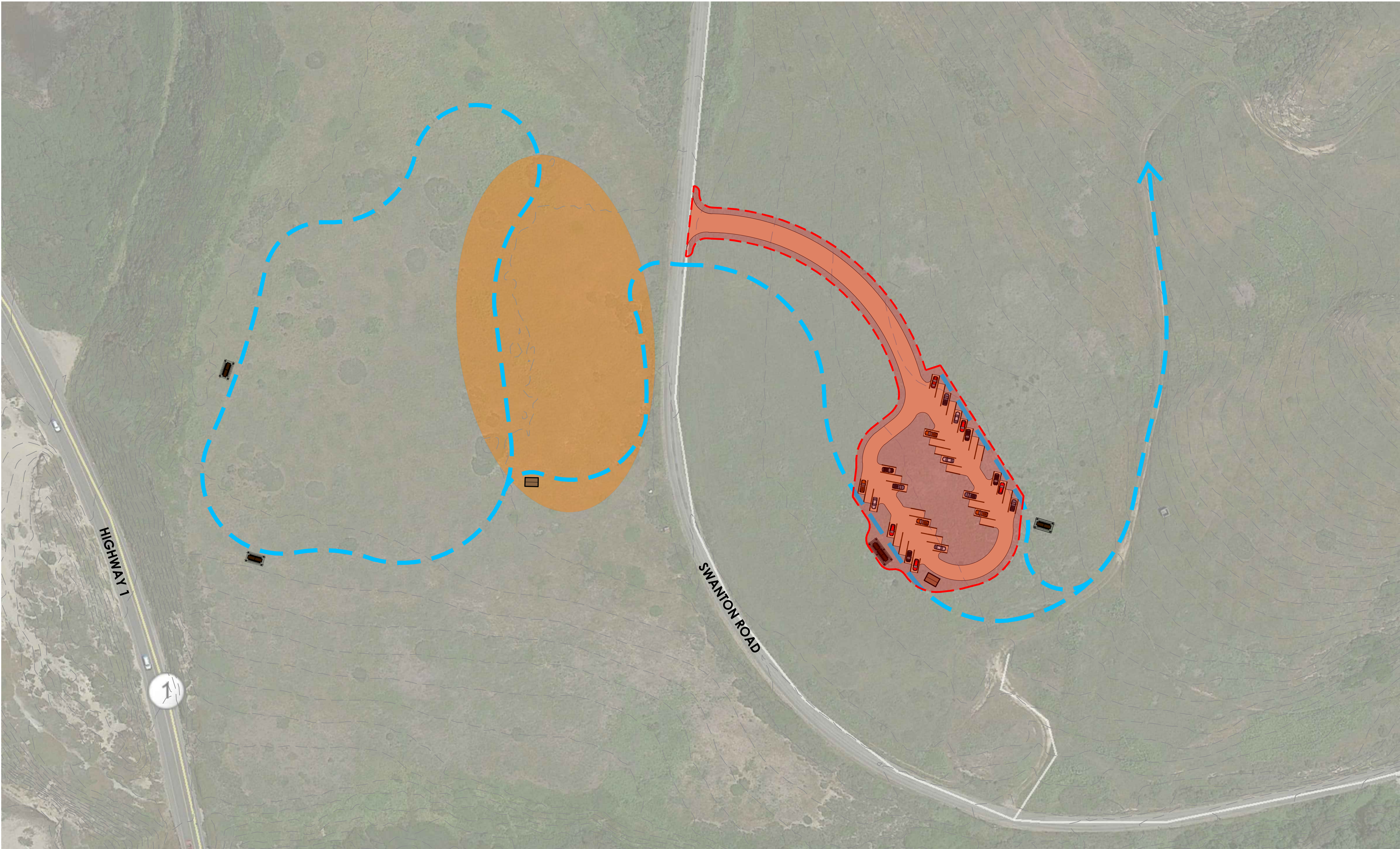


DRAFT CONCEPT: LIDDELL CREEK AT BONNY DOON ROAD

Cotoni-Coast Dairies Trailhead Feasibility Refinements

NOVEMBER 2019

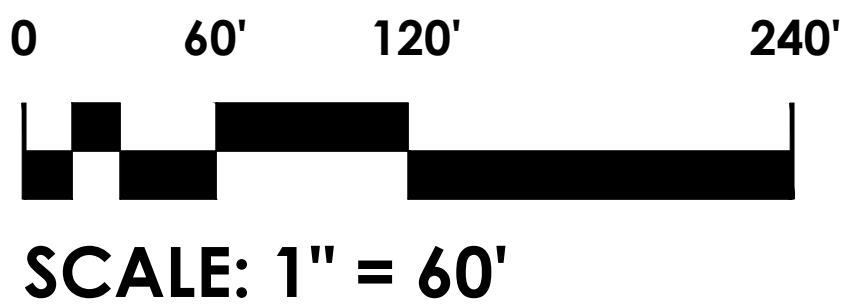
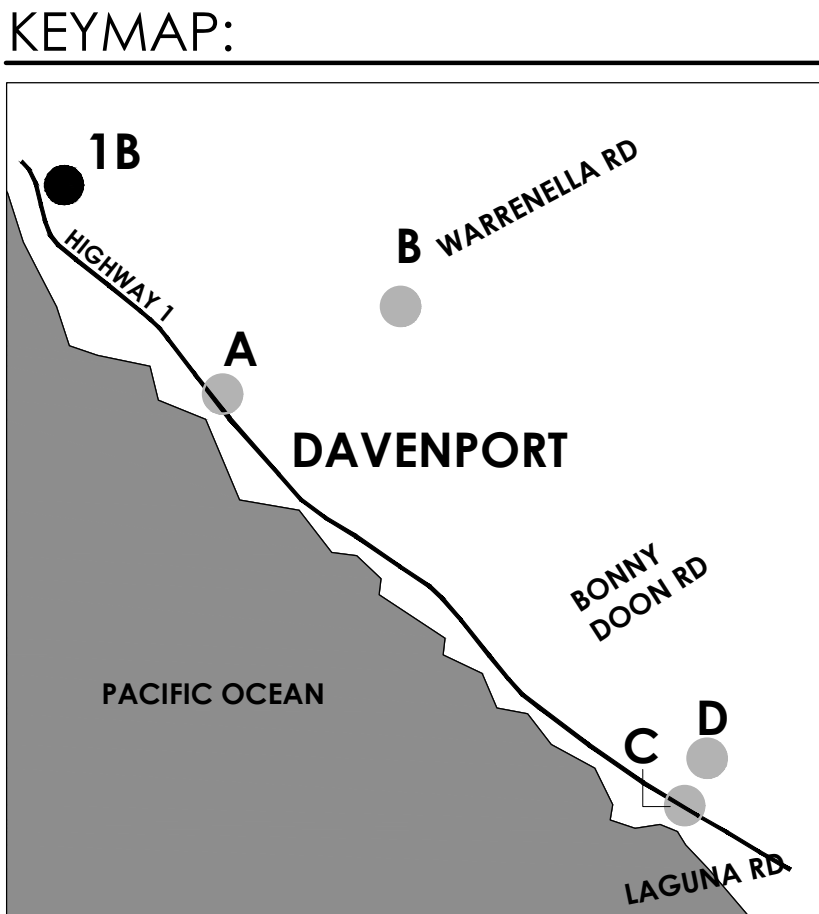
COTONI-COAST DAIRIES DRAFT CONCEPTS



LEGEND:

- GRAVEL BASE
- TRAIL OPPORTUNITY
- RESTROOM
- PICNIC SHELTER
- POTENTIAL ADDITIONAL PARKING
- TOPOGRAPHY
- GRADED AREA (PARKING)
1.35 ACRES (58,761 SF)

CONTOUR INTERVAL: 5'
PARKING CAPACITY: 38 SPACES



DRAFT CONCEPT: SWANTON ROAD GATE

Cotoni-Coast Dairies Trailhead Feasibility Refinements

NOVEMBER 2019

1B

Appendix C – General Monitoring Plan

GUIDELINES FOR PROJECT IMPLEMENTATION

The BLM will consider appropriate methods as described by the Council on Environmental Quality (definition below) to avoid, minimize, rectify, and reduce impacts when implementing projects consistent with law and agency policy.

- **Avoidance** is defined as those measures that result in a potential impact not occurring from the outset by not taking a certain action or parts of an action. The RMPA alternatives identify a range of potential avoidance measures. Examples of avoidance measures are withdrawn areas, closures, and exclusion areas.
- **Minimization** occurs through limiting the degree or magnitude of the action and its implementation. The RMPA alternatives identify multiple potential minimization options for a variety of projects and land uses. Examples of minimization are facility placement, timing of activities, facility design, and interim reclamation.
- **Rectification** is the repairing, rehabilitating, or restoring of the affected environment. This approach is more action-specific. An example would be the reclamation of the abandoned quarries.
- **Reduction** of impacts involves preservation and maintenance operations during the life of the proposed project to be mitigated. This approach is more design-specific. An example might be a phased development and reclamation project design or a similar approach to a related impact on the landscape.

The RMPA prioritizes the avoidance of impacts, followed by minimization techniques, which generally include rectification and reduction.

ADAPTIVE MANAGEMENT

The RMPA will be implemented using adaptive management processes. Under adaptive management, decisions, plans, and proposed activities are treated as working hypotheses rather than final solutions. For the purposes of this plan, adaptive management is a process that tests, evaluates, and adjusts the assumptions, objectives, actions, and subsequent on-the-ground results from the implementation of RMPA decisions. Used effectively, adaptive management provides resource managers with the flexibility to respond quickly and effectively to changing resource and user conditions. Changes in management actions are based on site-specific resource monitoring and evaluation. Adaptive management is not static but instead is an iterative process of monitoring, evaluation, and adjustment. General monitoring objectives are identified below. Specific objectives will be determined as part of the implementation plan after baseline monitoring has been completed.

The intent of adaptive management is to allow future management actions, as applied through resource management guidelines, to fully incorporate the knowledge and experience gained up to that time from monitoring, evaluation, and experimentation. However, adaptive management does not relieve managers of their responsibilities to consider the effects to the human environment of actions proposed under the guise of adaptive management. Managers would still be required to comply with the provisions of NEPA and other applicable laws, regulations, and policies before such actions are applied. Certain actions proposed as adaptive management techniques may require revision of the RMPA with additional environmental review and public-involvement opportunities to evaluate changes to the plan.

The adaptive management process is a continuous cycle through the following four phases:

- **Planning:** Management guidelines, actions, and objectives are developed. Monitoring techniques and adjustment thresholds are designed based upon available information, past monitoring information, and current scientific information.
- **Implementation:** Objectives, guidelines, actions, and constraints developed and identified during planning processes at all scales are applied as on-the-ground management.
- **Monitoring:** Monitoring includes all efforts to document the current state of implementation, the resulting resource conditions as measured through indicators, and the effectiveness of the implementation. Monitoring is derived from existing data and techniques, is outcome based, technically feasible, affordable, and operationally attainable. Two types of monitoring occur:
 - Implementation monitoring: Determines whether the decisions and proposed actions developed during planning are actually being implemented.
 - Effectiveness monitoring: Determines whether implemented decisions and actions have changed resource condition indicators. If so, determines whether the changes in the indicators are consistent with meeting the objectives.

When additional monitoring is required to fill information gaps, standardized monitoring techniques will be used where available before new techniques are developed. The BLM staff will be responsible for developing monitoring and adaptive management protocols and ensuring that documentation is sufficient to facilitate feedback into the adaptive management process.

- **Modification Evaluation:** The part of the process through which specific objectives, actions, monitoring thresholds, and even resource condition indicators may be modified to better meet the goals of the plan.
- **Timing Evaluation:** Determines the need for and time frames during which changes to planning, implementation, and monitoring should occur. The BLM staff will also be responsible for ensuring that monitoring results and other new information is compiled and evaluated in accordance with the two evaluation phases.

Recreation Development Phasing – Alternative D

Alternative D introduces a 2-phased approach to recreation facility development. The purpose of these phases is to ensure effective recreation management under Phase 1 prior to initiating Phase 2. Effectiveness is defined in Chapter 2 with broad goals. These goals are further defined here:

Goal	Definition	Monitoring/Reporting Interval
Safe and adequate public access to accommodate the recreation needs of the region.	Sufficient parking is provided on-site to reduce conflicts, facilities are maintained regularly, including removal of trash and/or graffiti.	Monthly monitoring, summarized in quarterly report
Trails maintained in good or very good condition	Ruts, holes, braking bumps, and other damage to the trail tread occurring through trail use will be filled and resurfaced to the original trail condition as determined by the adjacent trail surface. Maintenance will be performed as needed to prevent sedimentation to sensitive drainages and improve public safety on the trail.	Monthly monitoring, summarized in quarterly report

	If there are erosional features leading from trail tread to an adjacent drainage, initial steps would be taken within 1 month of initial discovery (weather and soil conditions permitting) to address resource concerns.	
Unauthorized social trails addressed in timely manner	Unauthorized social trails are physically closed within 1 month of discovery. Unauthorized trails are rehabilitated (as necessary) within 6 months of discovery.	Monthly monitoring, summarized in quarterly report
Unauthorized visitation to sensitive habitat areas is infrequent	Unauthorized entry detected at key observation points in RMZ2 and RMZ4 would be addressed through signage and/or patrol, if they increase by more than 5% in any reporting interval after opening of the property to public use.	Monthly monitoring, summarized in quarterly report

Monitoring

Monitoring will help determine if planning objectives are being met and allow the BLM to identify adaptive management necessary to achieve the plan goals. The information developed through monitoring will feed the evaluation process that may alter decisions or the timing of decisions, change implementation or maintain current management direction. The key step in developing a monitoring strategy is to define the questions that must be answered to evaluate the attainment of broad-scale management goals and objectives in the RMP. These questions will be used to focus monitoring on appropriate issues and avoid gathering irrelevant information. Focused monitoring also helps to keep costs within agency budgets. The first step is to select key monitoring elements and indicators that can be effectively sampled and can provide desired data at a reasonable cost. An example of such indicators is provided in the table below. A standard set of core data elements will be collected. Core data, including data necessary to evaluate achievement of the applicable Land Health Standards, are the minimum set of variables to be collected at all scales. Photomonitoring points will be established prior to project activities to determine where additional data should be collected.

Standardized measurement and reporting protocols will be developed in an Implementation Level Monitoring Plan because the need for consistency is essential. To the extent practicable, the Assessment, Inventory, and Monitoring (AIM) program will be incorporated into the implementation level monitoring plans (Toevs et al. 2015) and relevant data will be collected such that it is consistent with AIM methodology BLM IM 2016-139. Where possible, monitoring protocols will be designed to integrate existing monitoring efforts and will address multiple questions. Also, the design will have the flexibility to add data elements required to answer new questions raised during subsequent site-specific planning. Determining the specific monitoring approach for any question requires knowledge of detailed information on existing conditions. For example, trend assessment first requires gathering baseline or status information. Just a few of the projects that have occurred or will be anticipated during implementation of the RMP include: Landscape scale vegetation assessments; overviews for paleontology, history and archaeology; planning area-wide surveys for special status species; and visitor use inventories. Data from these projects will be vital to monitoring trends. A monitoring strategy must also identify the techniques needed to acquire a complete picture of the structure and pattern of a resource (i.e., remote sensing, sample-based studies, modeling).

A monitoring system requires the development and use of indicators and thresholds based on guidelines. Thresholds are measurable indicators of when a change in management needs to be made. For example, the specific amount of resource impacts that would be tolerated before a trail would be closed to public use and rehabilitated is a threshold. The development of indicators and thresholds will occur during the early part of plan implementation. Until these measures are in place, evaluations may not be completed. Indicators and thresholds will be periodically evaluated to assure that they remain appropriate for the Planning Area.

Monitoring Plan Indicators

Major Uses and Resources	Indicators to be Monitored
Land Health	- Ground Cover by Type and Plant Species - Evidence of Soil Erosion, Loss of Soil Depth - Riparian Functional Condition - Water Quality - Species of Concern Monitoring
Recreational Use	- Trail Condition - Numbers of Recreational Conflicts - Numbers of Search and Rescue Incidents - Erosion/Resource Damage Associated with Trails – See Land Health - Occurrences of New Trails - Evidence of Human Waste and Garbage - Vandalism - Area of Impact – See Land Health, Fish & Wildlife, & Spec. Stat. Sp. - SRP Stipulation Requirements - Visitor Experience - Unauthorized entry into closed areas
Cultural Resources	- Evidence of Looting/Vandalism - Changes in Site Integrity - Unauthorized Use of Historical Facilities
Paleontological	- Evidence of Looting/Vandalism - Changes in Site Integrity
Vegetation	- See Land Health Indicators
Livestock Grazing	- See Land Health Indicators

Major Uses and Resources	Indicators to be Monitored
	-Residual Dry Matter
Wildland Fire	- Fuel Characteristics - Burn Area Recovery - Rehabilitation Success
Fish & Wildlife	- Population Numbers/Trends - Impacts to Habitat – See Land Health Indicators
Special Status Species	- See Land Health Indicators - See Fish & Wildlife - See Water Resources
Visual Resources	- Changes in Visual Quality - Changes to Visual Intrusions/Contrast - Uses comply with VRM Class
Water Resources	- See Land Health Indicators - Flows and Rates for Anadromous Fish
Soils	- See Land Health Indicators
Public Information/ Visitor Services	- Brochure Distribution - Adequacy of Information - Visitor Satisfaction - Demand for Facilities - Numbers of Search and Rescue Incidents - Numbers of Law Enforcement Incidents

RMP EVALUATION

Evaluations are the mechanism that reviews implementation of the RMP at several levels to see whether management goals and objectives are being met and determine whether management direction is sound. Evaluation examines management actions to determine whether they are consistent with thresholds established for the achievement of the objectives. If they are not, evaluation identifies the reasons. The conclusions are then used to make recommendations on whether to continue current management guidelines, to make changes in management practices to meet plan goals and objectives, or to amend the plan objectives or decision to better meet the capabilities of the land and the intent of the legislation.

Reviews of the evaluation process will be periodically scheduled to ensure that:

- Monitoring data is gathered sufficiently in advance to be used effectively in the evaluation process.
- Evaluations are conducted at intervals that allow for adjustments to be made in management direction before crises develop. RMP Evaluations made too frequently will not detect changes in ecosystems because cost-effective monitoring systems cannot detect changes at this scale. On the other hand, if plan evaluations are delayed for too long or are not conducted at all, irreversible changes may take place without detection. RMP evaluations will be conducted every five years to assess the progress toward achieving broad-scale objectives and desired future conditions.

The evaluation process will review progress toward RMP implementation as well as new, scientific research, monitoring data, and other information on changed resource or social circumstances that that needs to be considered in future management. The evaluation may conclude:

- Management actions are moving resources toward the desired objectives. In this case, management actions are affirmed and may not need to be adjusted.
- Further research needs to be initiated or that actions must be adjusted to achieve objectives of the Plan more efficiently. If new information or research demonstrates better ways to achieve plan objectives, changes in activity planning and project implementation may be made.
- The objectives should be altered based on the new information. If the new information indicates that plan objectives should be reconsidered, a plan amendment may be required that will reexamine desired future conditions and ways to reach those conditions.

Appendix D: Project Design Features

Introduction

Project Design Features (PDFs) are actions that the BLM will take at the time of implementation to minimize the impact of the management action. This appendix defines the PDFs from which the BLM would select when implementing projects within C-CD in order to best eliminate or minimize impacts.

The PDFs below address activities that would be allowed under one or more of the draft alternatives. They are a compilation of commonly employed practices developed through professional experience or research and designed to minimize impacts to resources. They include, but are not limited to, avoidance, structural and nonstructural treatments, operations, and maintenance procedures. Although normally preventative, PDFs can be applied before, during, and after planned activities. Project Design Features are not intended to serve as detailed engineering specifications.

As noted in the alternatives, in the event that the approved RMP for C-CD includes the use of herbicides and pesticides as a tool for implementation, Bureau mandated Standard Operating Procedures (SOPs) would be applied. Some of the standard operating procedures serve the function of PDFs. These standard operating procedures are located in Appendix B the BLM's 2007 Record of Decision for Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Final Programmatic EIS (BLM 2007) and Appendix A of the BLM's 2016 Record of Decision for Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Final Programmatic EIS (BLM 2016).

Best Management Practices (BMPs) are practices or a combination of practices that have been determined to be most effective and practicable in preventing or reducing impacts of management actions. Many of the PDFs are also BMPs.

Selection and Application of PDFs

For actions implemented consistent with this RMP, BLM decision-makers will confer with BLM specialists and select appropriate and applicable PDFs from the lists below. The BLM will select PDFs based upon site-specific conditions, presence of listed species, or their critical habitat, technical feasibility, resource availability, and the resources potentially impacted. Not all of the PDFs listed will be selected for any specific management action.

The PDFs below do not provide an exhaustive list of all possible measures. During project planning and analysis, the BLM may identify measures not listed below for use in addition to a selection from this appendix. All measures will be applied in conformance with the RMP management direction.

Monitoring and Adjustment

The BLM will monitor the application of PDFs through implementation and effectiveness monitoring. Post-project implementation monitoring will evaluate whether the BLM applied the PDFs selected during the project planning process. Effectiveness monitoring will evaluate whether resource objectives were met using the PDFs.

The BLM will modify PDFs if monitoring demonstrates that resource objectives are not being met. The BLM will make changes to individual PDFs, or additions or deletions to the PDF lists below, through plan maintenance, consistent with CFR 1610.5–4.

PDF Lists

The PDF lists below address core activities that may take place within the Monument under one or more of the draft alternatives.

Biological Resources

1. Surveys will be conducted at the appropriate time of year to detect sensitive species and important biological resources.
2. Surveys will comply with current BLM, USFWS, NMFS and CDFW protocols, to the extent consistent with Federal law.
3. Critical and essential habitat for federal listed anadromous salmon and steelhead will be incorporated into trails planning

Wetland-Riparian Habitat

4. Stream crossings will be designed to minimize adverse impacts to soils, water quality, and riparian vegetation and provide for fish passage as appropriate.
5. Stream crossings of critical habitat for listed anadromous fishes will require channel spanning bridges or use of existing channel-spanning infrastructure (e.g. existing earthen dams) and the BLM will employ control measures to prevent erosion into the stream.
6. Trails will be designed to minimize short- and long-term damage to soils, vegetation, and wetlands. Boardwalks will be built to protect soils and wetland areas and to avoid take of listed frogs.
Railings and interpretative signs will be used to keep people on the trails and from entering habitat for listed species.
7. The spread of non-native species between waterbodies will be prevented by cleaning equipment of debris and residue that may contain biological dispersal propagules (seeds, eggs, larvae, etc.)

Rehabilitation/Restoration

8. All disturbance features including abandoned roads and trails and other significant disturbed sites (abandoned quarries) will be evaluated, ranked by priority, and restored to natural conditions.
9. Disturbed sites will be restored to natural conditions using site-appropriate measures and timelines developed in consultation/coordination with BLM resource specialists.
10. Restoration plans and requirements will be developed on a case-by-case basis and include post-project management
11. Local, native plant species and to the extent practical, local ecotypes/genotypes, will be used for restoration. Non-native plant species with no persistence and no ability to spread, such as sterile barley, may be used as temporary erosion control.
12. The Sudden Oak Death (SOD) pathogen *Phytophthora*, is locally common in wildlands of the north Monterey Bay area, as well as in plant nurseries. Careful inspection should be made of any native plants used in restoration that are imported from SOD areas, including nurseries.

Non-native Species

13. Projects and activities on BLM lands will include measures to minimize the introduction and spread of non-native plant and animal species.

14. Certified weed-free erosion control, soil and soil amendment (e.g. compost), and road base aggregate will be used to the extent practical. Importing soil from locations outside of C-CD will be strongly discouraged to prevent the import of weed seeds. Moving large volumes of soil between separate watersheds of C-CD will be strongly discouraged to prevent the spread of weed seeds. Moving chipped plant material between separate watersheds of C-CD will be strongly discouraged to prevent the spread of weed seeds (e.g. French broom) and Sudden Oak Death (SOD). Chipped plant material produced during fuel break construction should remain onsite where it is chipped.
15. Non-native species control methods will follow integrated pest management principles.
16. The use of pesticides shall comply with applicable Federal and State laws. BLM policy requires project-specific NEPA analysis and the issuance of a Pesticide Use Permit before the application of pesticides. Only products on the California BLM's list of approved pesticides may be used.
17. The release of non-native species will be prohibited, other than those legally introduced for biological control.

Special Status Species

Many measures to protect threatened and endangered species have been developed as a result of formal consultations between the BLM and USFWS on a variety of BLM actions. BLM has also developed BMPs, SOPs, and conservation measures and design criteria to mitigate specific threats to sensitive species. As additional measures are developed to minimize the adverse effects from future management activities, they are likely to become additional SOPs.

Special status species survey, avoidance, take minimization, mitigation measures, compensation, and monitoring measures required in biological opinions (programmatic and site-specific) will be incorporated into project design attached as conditions of approval, grant, or lease terms and conditions, or otherwise implemented in all BLM projects and authorizations that may affect listed species. These measures may change due to new information or new biological requirements. Current practices are found below:

General Guidelines for Conserving Habitat and Minimizing Project Impacts

1. Habitat disturbance will be minimized and conducted in a manner that reduces, as much as possible, the potential for take of individuals of a listed species.
2. Habitat improvement projects will be implemented where necessary to stabilize or improve unsatisfactory or declining wildlife habitat condition. Such projects will be identified through habitat management plans or project plans.
3. Whenever possible, management activities in habitat for special status species will be designed to benefit those species thorough habitat improvement.
4. Unless specified for reducing impacts, actions will be minimized during evening hours when some listed species are active and vulnerable to vehicle or equipment-induced injury or mortality will be minimized.
5. Food items and garbage will be contained in closed containers and removed daily.
6. The protective measures being implemented for listed species shall be extended to candidate and proposed species in the project area to the maximum extent practicable.

Water Resources

California's Non-Point Source (NPS) Program Plan (adopted by SWRCB in December 1999) identifies 61 Management Measures (MMs) which constitute the State's BMPs for controlling NPS pollution. MMs applicable to BLM program and management actions include, but are not limited to, those that pertain to chemical management (pesticide use), route construction and management, soil erosion and sediment control, hydromodification, and riparian areas and wetlands.

The BLM demonstrates compliance with the Clean Water Act and State water quality objectives by implementing PDFs that are consistent with the State's MMs. A suite of PDFs have been developed by various agencies, including the BLM, to address non-point source pollution on Federal lands.

1. Protect the existing water quality improvement functions of riparian areas and wetlands as a component of NPS programs. Degraded riparian areas and wetlands should be restored where restoration of such systems will abate polluted runoff.
2. Employ soil erosion and sediment control measures during watershed restoration activities to reduce or eliminate erosion and sediment transport or incidental sediment discharge. Soil erosion control measures include seasonal limits on operations, construction of runoff dissipation features (e.g rolling dips), placement of straw rolls and hay bales, mulching, and seeding to re-establish vegetative cover.
3. Road and trail construction/reconstruction shall utilize route design measures and BMPs to minimize soil erosion and sediment transport to riparian areas and wetlands. This can be accomplished by following designs for road systems, incorporating rolling dips and adequate drainage structures, properly installing stream crossings, avoiding road construction in streamside management areas, removing debris from streams, and stabilizing areas of disturbed soil such as road fills.
4. In areas with 303D listing, work with soil and water specialists to design parking or roads which help to reduce non-point source pollution. Address area contributing to non-point source pollution as part of the project.
5. Manage roads and trails to prevent sedimentation, minimize erosion, maintain stability, and reduce the risk that drainage structures and stream crossings will fail or become less effective. Components of this measure include inspections and maintenance actions to prevent erosion of road surfaces and to ensure the effectiveness of stream-crossing structures. This measure also addresses appropriate methods for closing roads that are no longer in use.
6. Promote revegetation of areas disturbed during road or trail construction.
7. Do not apply chemicals within 100 feet of perennial streams or channels with beneficial use(s) recognized by the State.
8. Do not apply chemicals directly into intermittent streams or channels with beneficial use(s) recognized by the State.
9. Avoid aerial application of chemicals when wind speeds would cause drift or where listed aquatic species habitat cannot be avoided.
10. Water withdraw from streams (for use in construction and dust abatement, as necessary) will employ necessary screening and reduction of pumping rates to prevent entrainment of aquatic species. Access to streams for purposes of water withdraw will minimize disturbance to streambanks and riparian vegetation.

Soil Resources

1. Minimize soil disturbance by limiting developments to the smallest area possible and by using previously disturbed areas and existing roads to the extent practicable.
2. Minimize soil disturbance on steep slopes.
3. Consider restricting access and suspend authorized projects during wet weather when soil resources will be adversely impacted by rutting, compaction, and increased erosion.
4. Minimize fire control lines to the width necessary to effectively stop fire spread. Rehabilitate lines by smoothing out berms and installing waterbars prior to the rainy season.

5. Assess the need for soil stabilization and erosion control following wildfires. Use the Emergency Stabilization and Rehabilitation process to determine and implement needed actions.
6. Actively patrol public lands to prevent unauthorized off-road travel. If unauthorized routes are found, block access to minimize further soil disturbance and reduce the potential for erosion through rehabilitation action.

Cultural Resources

1. Prior to the implementation of all proposed actions, cultural resource compliance with the National Historic Preservation Act, Section 106 and 110, will be coordinated pursuant to the current and any subsequent versions, supplemental procedures and amendments of the *National Programmatic Agreement Among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which the BLM Will Meet its Responsibilities Under the National Historic Preservation Act* and the *State Protocol Agreement Among the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer and the Nevada Historic Preservation Officer Regarding the Manner in Which the Bureau of Land Management Will Meet its Responsibilities Under the National Historic Preservation Act and the National Programmatic Agreement Among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation*. Should either of these agreements be terminated, the BLM would comply with requirements under Sections 106 and 110 of the National Historic Preservation Act (NHPA) through the implementation of procedures put forth in 36 CFR 800.
2. Archaeologists, law enforcement rangers, resource staff specialists, Native Americans, or designated volunteer stewards will patrol and monitor selected significant cultural resources on public lands in the Central Coast FO to reduce threats from human and natural disturbances.
3. The BLM will coordinate with Native Americans, cultural resource specialists, interdisciplinary specialists, conservationists, and interested public, as appropriate, to apply the best available science to determine the amount and type of maintenance desired at cultural sites that are threatened by human or natural causes and how best to mitigate identified problems.
4. The Central Coast FO will continue to support access by the Native Americans to traditional material collecting and gathering locations and ceremonial places. It is a federal policy to protect and preserve for the American Indian, the inherent right of freedom to believe, express, and exercise their traditional religions, including access to religious sites, use and possession of sacred objects, and freedom to worship through ceremonies and traditional rites (American Indian Religious Freedom Act of 1978). Executive Order 13007, Indian Sacred Sites (1996), directs federal agencies to manage federal lands in a manner that accommodates Indian religious practitioners' access to and ceremonial use of Indian sacred sites and that avoids adversely affecting the physical integrity of such sacred sites, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions.
5. Continue open dialogue and share information with Native Americans and ethnic groups that have cultural ties to lands managed by the Central Coast FO.
6. Conduct cultural resource inventory and evaluations for all projects that require soil disturbance or cause a visual intrusion on a historic property. The presence or absence of cultural properties would be determined prior to the approval of any surface-disturbing activity. When cultural properties are present, the project would be redesigned or modified

- to safely avoid impacting cultural sites or steps would be taken to adequately mitigate impacts through project redesign or data recovery.
7. Soil erosion can severely impact surface and subsurface cultural resource integrity. Potential secondary impacts on cultural resources caused by erosion would be analyzed during project planning. Residual impacts on cultural resources outside the project area would be carefully considered in surface-disturbing projects.
 8. Identification, safe avoidance, or mitigation of potential adverse effect on cultural properties shall be required as a condition of a lease, permit, license, and other federal undertakings for both external and internal projects.
 9. Any late discovery of a cultural or paleontological resource during a project would be reported to the authorized officer. All activity in the immediate discovery area associated with the project would be suspended until an evaluation of the discovery is made by the archaeologist to determine appropriate actions to prevent the loss of significant cultural, paleontological, or scientific values. A written authorization to resume the project, or to take appropriate mitigation action, would be issued by the authorized officer.

Recreation

The following criteria are used to determine suitable locations for new trails and trail reroutes within C-CD. This document utilizes terminology from the “Roads and Trails Terminology” (Technical Note 422, Nov. 2006). These criteria are to be followed as guidelines. Not all of the criteria can be met on every segment of every trail. Their purpose is to help create sustainable, low maintenance trails that provide quality recreation experiences based on predetermined trail management objectives (TMOs). Specialty trails requiring higher maintenance may be allowed in appropriate locations.

1. Access for and use by the physically challenged will be considered in all project planning.
2. Create loops and avoid dead end trails. All trails should begin and end at a trailhead or another trail. A well-planned stacked loop trail system offers recreationists a variety of trail options. Easier, shorter loops are arranged close to the trailhead, with longer, more challenging loops extending further beyond the trailhead. Occasionally, destination trails to a point of interest will require an out and back trail, but only if they cannot be reasonably incorporated into a loop.
Identify control points and use them to guide trail design and layout. Control points are specific places or features that influence where the trail goes. Basic control points include the beginning and end of the trail, property boundaries, intersections, drainage crossings, locations for turns, and other trails. Positive control points are places where you want users to visit, including scenic overlooks, historic sites, waterfalls, rock outcroppings, lakes, rivers and other natural features or points of interest. If the trail does not incorporate these features, users will likely create unsustainable social trails to get to them. - Negative control points are places you want users to avoid, such as low-laying wet areas, flat ground, extremely steep cross slopes or cliffs, unstable soils, environmentally sensitive areas, sensitive archaeological sites, streams with listed species, safety hazards, and private property.
3. Knowing these control points provides a design framework. Try to connect positive control points while avoiding the negative control points. Use cross slope and avoid flat ground whenever possible. The trail tread should generally run perpendicular to the cross slope and should utilize frequent grade reversals. This is the best way to keep water off the trail. Use curvilinear design principles to create a trail that follows the natural contours of the topography, sheds water, blends with the surrounding terrain, and provides fun recreation opportunities. The following grade guidelines and the PDFs listed in specialty sections, will help determine appropriate tread locations:

- a) The Half Rule: “A trail’s grade shouldn’t exceed half the grade of the hillside or side slope (cross slope) that the trail traverses. If the grade does exceed half the side slope, it’s considered a fall-line trail. Water will flow down a fall-line trail rather than run across it. For example, if you’re building across a hillside with a (cross slope) of 20 percent, the trail tread grade should not exceed 10 percent.” (IMBA 2004). Steeper cross slopes allow more flexibility for sustainable tread grades while flat or low angle cross slopes can be problematic. There is an upper limit to this rule. Sustaining a 24 percent tread grade, even on a 50 percent cross slope is unlikely. Additionally, trail segments may break this rule on durable tread surfaces such as solid rock.
 - b) The Ten Percent Average Guideline: The average trail grade over the length of the trail should be 10 percent or less for greatest sustainability. Short sections of the trail may exceed this, but overall grade should remain at 10 percent or less.
 - c) Maximum Sustainable Grade: This is the upper grade limit for those short trail segments that push the limits of the previous two guidelines. It is determined by a site-specific analysis¹⁹³ based on TMO’s, environmental conditions, and observations of existing trails – what’s working and what’s not?
 - d) Grade Reversals: Frequent changes in direction of tread grade (gentle up and down undulations) will ensure that water is forced off the trail at frequent intervals.
4. Locate trails in stable soils.
 5. Drainage crossings are key control points and should be selected carefully. Consider both the trail’s impact on the drainage (soil erosion and sedimentation), and the drainage’s impact on the trail (changing tread surface, water channeling onto trail). The trail should descend into the climb out of the drainage to prevent water from flowing down the trail. Avoid long or steep entries into drainages. Design grade reversals into the trail on each side of the approach to minimize water and sediment entering from the trail. Site trail drainage crossings on rocky stream beds or bedrock, wherever possible.
 6. Avoid switchbacks. Switchbacks are difficult, time-consuming, and expensive to construct, and require regular maintenance. Users often cut them, causing avoidable impacts. Utilizing curvilinear design principles eliminates the need for most switchbacks. Climbing turns are easier to construct and maintain and utilize natural terrain features (benches, knolls, rock outcrops) to change the direction of a trail.
 7. Avoid ridge tops. Ridge tops are often primary transportation corridors for wildlife and were often used by Native Americans as travel routes. Noise from ridge top trails is broadcast over a wide area. Locate trails on side hills, off ridge tops, using ridges and watersheds as natural sound barriers to isolate noise.
 8. Use vegetation and other natural features to conceal the trail and absorb noise. Try to minimize the visual impact of the trail by following natural transitions in vegetation or soil type. A trail near the base of a side slope or on rimrock is usually less visible than a mid-slope trail. Denser vegetation will hide a trail, lessen noise transmission, and can dissipate the energy of rainfall on the bare soil of the trail tread.
 9. Carefully design intersections to avoid safety problems. When designing bicycle use trails, be aware of sighting distance and sight lines. Collisions can be avoided if recreationists can see each other. Avoid four-way intersections. Offsetting the cross traffic helps reduce speeds and reduces the risk of collisions.
 10. Sites that cannot be maintained to acceptable health and safety standards will be closed until deficiencies are corrected.

Visual Resources

1. Require projects to be evaluated against the context of their unique environment and regulate structure height, setbacks and design to protect visual and aesthetic resources.
2. Protect significant public vistas from all publicly used roads, trails, and vista points by minimizing disruption of landform and aesthetic character caused by parking areas, signs, and structure design. Provide necessary grading design and landscaping to screen development which is unavoidably sited within these vistas
3. Prohibit the placement of new permanent structures that would be visible from the beach.
4. Require parking areas, signs, and structures to be sited out of public view, and obscured by natural landforms and/or existing vegetation. Where proposed projects are unavoidably visible, identify those visual qualities worthy of protection and require the siting, architectural design, grading design, and landscaping to mitigate the impacts on those visual qualities.
5. All grading and land disturbance projects shall blend contours of the finished surface with the adjacent natural terrain and landscape to achieve a smooth transition and natural appearance and incorporate only characteristic or indigenous plant species appropriate for the area.

Appendix E - Wild & Scenic River Study for Cotoni-Coast Dairies

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As part of the current Resource Management Plan amendment (RMPA) process being conducted by the US Department of the Interior, Bureau of Land Management (BLM), Central Coast Field Office (CCFO), an inventory and analysis of rivers and streams within the Cotoni-Coast Dairies (C-CD) unit of the California Coastal National Monument (CCNM) is required to determine whether rivers or segments of rivers are “eligible” and “suitable” for consideration in the National Wild and Scenic Rivers System (NWSRS).

I. Statutory Background

The Wild and Scenic River Act (WSR Act) was enacted by Congress in 1968 with the realization that, “the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.” Rivers that fall under this designation have to meet criteria of being free flowing from WSR Act, Section 16(b) “existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway”) and possess outstandingly remarkable values (ORVs: scenic, recreational, geologic, fish, wildlife, cultural, historical, or other). The act provides for protection for included river segments so they are “preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.”

Rivers and river segments designated under the act are protected and managed to maintain their free flowing character and values that led to designation. Section 10 of the WSR Act mandates, “each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values.” Protections put in place for designated segments are intended to protect and/or enhance the river from its current state. If a river or segment is added to the NWSRS a specific plan based on the characteristics of an area will be created, tailored to the specific qualities and competing factors of an area.

Most rivers are added to the NWSRS through federal legislation, after a study of the river’s eligibility and suitability for designation. Under Section 5(d)(1) of the WSR Act, federal agencies are required to consider and evaluate rivers on lands they manage for potential designation in conjunction with the preparation of their RMP. The BLM Manual, 6400, further defines and establishes the policy, program direction and procedural standards for fulfilling the requirements of the WSR Act. The NWSRS study process has three distinct steps:

1. Determine what rivers or river segments are eligible for NWSRS designation;
2. Determine the potential classification of eligible river segments as wild, scenic, recreational or any combination thereof; and
3. Conduct a suitability study to determine if the river segments are suitable for designation as components of the NWSRS.

This report documents the three steps of the process for the streams in the planning area.

II. Eligibility of Rivers & Streams

Identification

The initial step in the eligibility determination was to create an inventory of all potential rivers and river segments falling on lands administered by the BLM at C-CD. A variety of sources were reviewed to identify waterways which could have potential for wild and scenic river designation. They include the USGS National Hydrography Dataset, river segments identified by state or local government, river segments identified by the public during formulation of the C-CD RMPA/EA, and river segments identified by the planning team as having potential to meet Wild and Scenic River eligibility requirements. Intermittent streams were added to the inventory based on input from BLM specialists where potential outstandingly remarkable values (ORVs) may exist. None of the river segments being considered are identified on the U.S. National Parks Service's Nationwide Rivers Inventory List, or the Outstanding Rivers List compiled by American Rivers, Inc. (1988).

Per the WSR Act, an eligible segment must be free flowing and possess one or more ORV(s). River values are evaluated within a region of comparison and are identified as outstandingly remarkable if the value is significant on a regional or national scale. Eligibility decisions are based solely on the values of a river. Managerial constraints and other factors are considered during the suitability determination stage of the process. If a river segment is determined eligible, it is then assigned a tentative classification (wild, scenic, recreational) based on the level of human development in the river corridor.

The C-CD Interdisciplinary Team is made up of specialists covering resources and programs under the field office jurisdiction. This team reviewed the initial inventory list and added segments potentially containing ORVs. The interdisciplinary team reviewed the data collected and determinations made during field visits to each segment to provide a final determination on eligibility for each segment. Determinations of free-flowing and ORVs rely on professional judgment making the collective knowledge and experience of this team critical to the eligibility determination process.

There are six perennial and intermittent streams totaling 20.1 miles located on C-CD including Molino Creek, Agua Puerca (Ferrari) Creek, San Vicente Creek, Liddell Creek, Yellow Bank Creek, and Laguna Creek. The watersheds of several of these streams are entirely or almost entirely on C-CD. The larger streams, Laguna Creek and San Vicente Creek, have watershed areas that extend well beyond the C-CD boundary. The streams tend to exhibit "flashy" (rapidly rising and falling) winter flows in response to storm events, which themselves are intensified by the orographic effect of the mountains. As the dry season progresses and the soil dries out, the streams continue to be fed by seeps and springs. These streams segments are identified in Figure 1 and are listed in Table 2 below.

Eligibility Determination

Per the WSR Act, an eligible segment must be free flowing and possess one or more ORV. If a river segment is determined eligible, it is then assigned a tentative classification. The suitability stage of the assessment considers a variety of factors beyond resource values in determining the segments for designation. Each identified river segment was evaluated to determine whether it is eligible for inclusion in the NWSRS.

The WSR Act defines free-flowing as, "existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway." A segment does not need to be perennial to be qualified as free-flowing. Intermittent watercourses with regular and predictable flows, enough to maintain the segment's ORVs, can qualify, provided the flow comes from a natural source. Watercourses that only flow from unpredictable events such as flash floods are generally not free flowing. In determining if a segment is free-flowing, "evaluation should focus on normal water years, with

consideration of drought or wet years during the inventory.” Free flowing does not necessarily connote natural hydrology; existence of small dams, diversion works, or other minor structures at the time the river segment is being considered shall not automatically disqualify it.

Outstandingly Remarkable Values and their Region of Comparison

A variety of values were evaluated for each segment to determine if they are Outstandingly Remarkable. The WSR Act stipulates that ORVs of a river segment will be in their immediate environments and need to be river related. This means in the vicinity of the river (with a 0.25-mile preliminary boundary per BLM Manual 8351) or created by or exists because of the river. Potential ORVs include scenic, recreational, fish, wildlife, cultural, and historic values, and other similar values. Determination of ORVs relies on a professional assessment of the values associated with a river based on objective, scientific reasoning. An ORV, “would be one that is a conspicuous example from among a number of similar values that are themselves uncommon or extraordinary”. This report documents the reasoning and justification for declaring segments eligible. Each value was evaluated over a Region of Comparison. Values were evaluated based on the ecoregion the river segment is located within, the California Coast Ranges, within the Pacific Border Province (California Coastal Commission 1987).

Scenic - The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features or attractions. The BLM Visual Resource Inventory Handbook, H-8410-1, may be used in assessing visual quality and in evaluating the extent of development on scenic values. The rating area must be scenic quality “A,” as defined in the BLM Visual Resource Inventory Handbook.

When analyzing scenic values, additional factors, such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed, may be considered. Scenery and visual attractions may be highly diverse on most of the river or river segment.

The scenic designation is used when the landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features or attraction. Additional factors, such as seasonal variations in vegetation, scale of cultural modifications, and length of time negative intrusions are viewed, can also be considered when analyzing scenic values. Scenery and visual attractions may be highly diverse over most of the public lands involved, are not common to other waterways in the region, and must be of a quality to attract visitors from outside the area.

Recreational - Recreational opportunities in the subject river corridor are or could be popular enough to attract visitors from throughout or beyond the region of comparison or are unique or rare in the region. River-related opportunities include sightseeing, interpretation, wildlife observation, camping, photography, hiking, fishing, hunting, and boating. Such a recreational opportunity may be an ORV without the underlying recreational resource being an ORV; for example, fishing may be an ORV without the fish species being an ORV. The river may provide settings for national or regional usage or competitive events.

Geologic - The river area contains one or more examples of a geologic feature, process, or phenomenon that is unique or rare in the region of comparison. The features may be in an unusually active stage of development, represent a textbook example, or represent a unique or rare combination of geologic features, such as erosional, volcanic, glacial, or other geologic feature.

Fish - Fish values include either indigenous fish populations or habitat or a combination of these river-related conditions, described as follows:

a. Populations—The river supports nationally or regionally important populations of indigenous resident or anadromous fish species. Of particular significance is the presence of wild stocks or federally or state-listed or candidate, Threatened, Endangered, or BLM sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination that it is an ORV.

b. Habitat—The river provides exceptionally high-quality habitat for fish species indigenous to the region of comparison. Of particular significance is habitat for wild stocks or federally- or state-listed or candidate, Threatened, Endangered, or BLM sensitive species. Diversity of habitat is an important consideration and could, in itself, lead to a determination that it is an ORV.

Wildlife - Wildlife values include either terrestrial or aquatic wildlife populations or habitat or a combination of these conditions, as described below:

a. Populations—The river or area within the river corridor contains nationally or regionally important populations of indigenous wildlife species dependent on the river environment. Of particular significance are species considered unique to the area or populations of federally or state-listed or candidate, Threatened, Endangered, or BLM sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination that it is an ORV.

b. Habitat—The river, or area within the river corridor, provides exceptionally high-quality habitat for wildlife of national or regional significance or may provide unique habitat or a critical link in habitat conditions for federally- or state-listed or candidate, Threatened, Endangered, or BLM sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitat is an important consideration and could, in itself, lead to a determination that it is an ORV.

Cultural - Cultural values are archaeological resources and traditional cultural properties. Archaeological resources are the physical remains of past human activities, whereas traditional cultural properties are locations associated with cultural traditions or religious importance of a living community.

a. Archaeological Resources—The river, or river corridor, has scientifically or culturally valuable locations of past human uses that retain integrity or contains an example of a district, site, building, or structure that is rare or outstanding, is associated with a distinctive style, or is associated with a regionally or nationally important event or person. Examples of such locations are prehistoric or historic archaeological sites or historic structures that are eligible for listing on the National Register of Historic Places or have been designated a National Historic Landmark.

b. Traditional cultural properties—The river or area within the river corridor contains locations of traditional cultural or religious importance to a specified social or cultural group. Examples of traditional cultural properties are a unique plant procurement site of contemporary significance, fishing grounds, ceremonial areas, and historic village locations. Traditional cultural properties may or may not be integrated with archaeological locations.

Historical - The river, or area within the river corridor, has scientific value or contains a rare or outstanding example of a district, site, building, or structure that is associated with an event, person, or distinctive style. Likely candidates include sites that are eligible for the National Register of Historic Places at the national level or have been designated a national historic landmark by the Secretary of the Interior.

Other Similar Values - While no specific evaluation guidelines have been developed for the "other similar values" category, additional values deemed relevant to the eligibility of the river segment should be considered in a manner consistent with the foregoing guidance. Other similar values may include but not limited to, hydrological, ecological/biological diversity, paleontological, botanical, and scientific study opportunities.

To be considered as "outstandingly remarkable", a river related value must be a unique, rare, or exemplary feature that is significant at a comparative regional or national scale. Only one such value is needed for eligibility. All values should be directly river related, meaning they should:

1. Be located in the river or on its immediate shorelands (generally within ¼ mile on either side of the river);
2. Contribute substantially to the functioning of the river ecosystem; and/or
3. Owe their location or existence to the presence of the river.

These are the only factors considered in determining the eligibility of a river segment. All other relevant factors are considered in determining suitability. A river need not be navigable by watercraft to be eligible. For purposes of eligibility determination, the volume of flow is sufficient if it is enough to maintain the outstandingly remarkable value(s) identified within the segment.

Potential Classifications for Eligible Segments

River and stream segments determined to be free-flowing and possessing at least one ORV were assigned a tentative classification. There are three possible classifications based on the amount of development, accessibility, and water quality along the watercourse or shoreline. There is some flexibility in this determination, and the final decision relies on professional judgment (Table 1).

Table 1. Attributes Leading to Tentative Classification of Eligible River Segment under the Wild and Scenic Rivers Act of 1968

Attributes	Classification		
	Wild	Scenic	Recreational
Water Resources Development (impoundments, diversions, etc.)	Free of impoundment	Free of impoundment	Some existing impoundment or diversion. The existence of low dams, diversions, riprap, or other modifications of the waterway is acceptable, provided the waterway remains generally natural and riverine in appearance.
Shoreline Development	Essentially primitive.	Largely primitive and undeveloped.	Some development.

Attributes	Classification		
	Wild	Scenic	Recreational
	Little or no evidence of human activity. The presence of a few inconspicuous structures, particularly those of historic or cultural value, is acceptable. A limited amount of domestic livestock grazing or hay production is acceptable. Little or no evidence of past timber harvest. No ongoing timber harvest.	No substantial evidence of human activity. The presence of small communities or dispersed dwellings or farm structures is acceptable. The presence of grazing, hay production, or row crops is acceptable. Evidence of past or ongoing timber harvest is acceptable, provided the forest appears natural from the riverbank.	Substantial evidence of human activity. The presence of extensive residential development and a few commercial structures is acceptable. Lands may have been developed for the full range of agricultural and forestry uses. May show evidence of past and ongoing timber harvest.
Accessibility	Generally inaccessible except by trail. No roads, railroads, or other provision for vehicular travel within the river area. A few existing roads leading to the boundary of the river area is acceptable.	Accessible in places by road. Roads may occasionally reach or bridge the river. The existence of short stretches of conspicuous or longer stretches of inconspicuous roads or railroads is acceptable.	Readily accessible by road or railroad. The existence of parallel roads or railroads on one or both banks, as well as bridge crossings and other river access points, including fords, is acceptable.
Water Quality	Meets or exceeds Federal criteria or Federally approved state standards for aesthetics, for propagation of fish and wildlife normally adapted to the habitat of the river, and for primary contact recreation (swimming), except where exceeded by natural conditions.	No criteria prescribed by the WSR Act. The Federal Water Pollution Control Act Amendments of 1972 have made it a national goal that all waters of the US be made fishable and swimmable. Therefore, rivers will not be precluded from scenic or recreational classification because of poor water quality at the time of their study, provided a water quality improvement plan exists or is being developed in compliance with applicable federal and state laws.	

Protection of Eligible Segments

Segments determined eligible in this report are subject to protection until the suitability stage is completed. Following suitability determinations, river segments determined non-suitable return to the underlying management prescribed in the effective RMPA, while suitable rivers are managed to maintain their free flowing character and ORVs as per the alternative selected in the Proposed RMPA. During the period between issuing the final eligibility report and the DR, eligible segments identified during a planning process (Section 5(d)(1) of the WSR Act) are offered a different level of protection than river identified for study by Congress (Section 5(a) of the WSR Act). While congressionally authorized study rivers receive protection under the WSR Act, protection of the free-flowing characteristics and ORVs of agency-identified study rivers occurs through other authorities including the National Environmental Policy Act (NEPA), the Federal Lands Policy and Management Act (FLPMA), the Clean Water Act (CWA), and the Endangered Species Act (ESA). For example, a federal or federally permitted action subject to the NEPA process would have to consider the effects on the free-flowing and ORVs of any affected eligible stream segments.

Molino Creek

Description

The Molino watershed supports mixed conifer and redwood forests, scrub communities, native and annual grasslands, and riparian and wetland communities. Grazing leases extend through a majority of the grassland, scrub, and woodland communities. The Molino woodland and scrub communities have a high proportion of grassland openings and grassland/woodland edge. Wildlife diversity is presumed high and relatively disturbance-tolerant. The watershed supports anadromous salmonids and has 40 percent of the known locations of the federally-threatened California red-legged frog on C-CD (Environmental Science Associates [ESA] 2004).

Molino Creek originates beyond the northeastern corner of C-CD, flows through the upper northern part of the property, and eventually ends at the ocean. Although the stream length and watershed size of Molino Creek are relatively small compared to other coastal streams in the region (e.g., Scotts Creek, San Vicente Creek), the stream does provide limited habitat for anadromous salmonids. However, there is at least one impassable barrier downstream of potential spawning and rearing sites where the creek channel cross underneath Swanton Road and drops approximately 6' over a vertical ledge into a small series of plunge pools. The County has a project plan to replace the failed bridge crossing above Molino Creek and restoring the stream to natural grade at this location. There is another impoundment on the creek further upstream on C-CD. At this site a dam constricts the creek and the water flows through a pipe. Due to these features, Molino Creek is not considered to be free-flowing.

Outstandingly Remarkable Values

Molino Creek provides designated critical habitat for the Central California Coast Distinct Population Segment (DPS) of steelhead, which is listed as threatened under the Federal Endangered Species Act (National Oceanic and Atmospheric Administration National Marine Fisheries Service [NOAA Fisheries 2005). The Molino Creek area is also designated critical habitat for the California red-legged frog, listed as threatened under the Federal Endangered Species Act (U.S. Fish and Wildlife Service [USFWS] 2010). This species is thought to utilize all of the creeks on C-CD for summer habitat.

Classification

The section of Molino Creek that flows through C-CD has an old dam structure, as well as grazing infrastructure. An old road runs along a portion of the segment, which is also bisected by the county-maintained Swanton Road. Due to the presence of these features, the tentative classification is recreational.

Agua Puerca Creek

Description

Agua Puerca is also located in the northern portion of the Property and enters the ocean at Davenport Landing after flowing through the U.S. Abalone facility. The mouth of the creek consists of an old concrete flume which was previously used by a fish farm to guide returning adult salmon back into the farm. The headwaters of Agua Puerca Creek occur within C-CD.

With respect to the geomorphologic and biotic conditions of the stream, Agua Puerca Creek appears to provide adequate habitat for a small salmonid population although the presence of difficult-to-pass and/or impassable migration barriers are likely to be limiting factors. Within C-CD, a small dam blocks the creek and diverts water to a residence. As is the case with Molino Creek, the small watershed size of Agua Puerca Creek may also limit water availability. Due to the presence of these barriers and impoundments, Agua Puerca Creek is not considered to be free-flowing.

Outstandingly Remarkable Values

Agua Puerca Creek provides designated critical habitat for the Central California Coast Distinct Population Segment (DPS) of steelhead, which is listed as threatened under the Federal Endangered Species Act. The Agua Puerca Creek area is also designated critical habitat for the California red-legged frog, listed as threatened under the Federal Endangered Species Act (USFWS 2010). This species is thought to utilize all of the creeks on C-CD for summer habitat. Other sensitive wildlife resources within the watershed include habitat for bats, raptors, and San Francisco dusky-footed woodrat.

Classification

The section of Agua Puerca Creek that flows through C-CD has an old dam structure, as well as grazing infrastructure. An old road runs along a portion of the segment, which is also bisected by the county-maintained Swanton Road. Due to the presence of these features, particularly the impoundment structure, the tentative classification is recreational.

San Vicente Creek

Description

San Vicente Creek flows through the town of Davenport on its way to the ocean. At the C-CD property boundary, the creek passes through a railroad crossing (an artificial bore through bedrock) and the Highway 1 crossing (a box culvert) before emptying into the Pacific Ocean. These crossings do appear passable to salmonids during at least parts of the migration season.

The San Vicente Creek watershed is dominated by riparian areas and wetlands, grasslands, coastal scrub, and conifer forest. San Vicente Creek is the only stream on C-CD that supports coho salmon and steelhead. In addition, the San Vicente watershed has the most extensive area of redwood forest on the property.

Generally high levels may of sand and silt in the creek may create sub-optimal salmonid conditions, and potentially high stream temperatures due to limited channel shading, particularly in the lower reaches. The source of sedimentation was not identified, but old quarries located upstream of C-CD may contribute to these conditions.

Outstandingly Remarkable Values

San Vicente Creek is one of the few streams south of the Golden Gate Bridge with a coho run. San Vicente Creek also supports a healthy steelhead run, and overall has the best salmonid habitat on C-CD. Both of these species are listed as threatened under the Endangered Species Act [NOAA Fisheries 1999, 2005]. The National Marine Fisheries Service has been stocking San Vicente Creek with coho salmon from a hatchery on nearby Scotts Creek since 2011 (Resource Conservation District of Santa Cruz County [RCD] 2014).

The San Vicente Creek area is also designated critical habitat for the California red-legged frog, listed as threatened under the Federal Endangered Species Act (USFWS 2010). This species is thought to utilize all of the creeks on C-CD for summer habitat. Other sensitive wildlife resources within the watershed include habitat for bats, raptors, and San Francisco dusky-footed woodrat.

Classification

A large portion of the physical watershed of San Vicente Creek is leased by Cemex cement, where mining activities included a large shale quarries; several abandoned quarries; conveyor line; and an extensive road network; operations have now ceased and reclamation activities are underway. The old San Vicente Railroad alignment, which cuts across the north side of the canyon high above the creek, is a private in-holding. Lower portions of the watershed support residential housing and structures associated with the town of Davenport, which has dozens of privately owned lots situated immediately adjacent to the BLM-managed lands along the floodplains of the lower portion of San Vicente Creek. Due to the presence of these features, the tentative classification is scenic.

Liddell Creek

Description

The Liddell watershed supports riparian areas and wetlands, grasslands, coastal scrub, live oak woodlands, and conifer forest. There are three branches to Liddell Creek including West Liddell Creek, Liddell Creek, and the East Branch. Liddell Creek appears to originate and terminate on C-CD, and California State Water Resources Control Board (SWRCB) records do not indicate appropriation. The east and west branches originate just beyond C-CD and eventually merge into Liddell Creek.

All three branches of Liddell Creek are exposed to sedimentation due to the soil types in this watershed and past mining operations. This sedimentation appears to be the primary limiting factor in this watershed, although the dense canopy cover in this system has also been shown to limit primary production, and thus food supplies for fish (McGinnis 1991). While dense canopy cover is a natural condition, the input of fine sediments undoubtedly reduces available spawning habitat.

Outstandingly Remarkable Values

All three branches of Liddell Creek support steelhead and are designated as critical habitat for the California Central Coast steelhead (NOAA Fisheries 2005), listed as threatened under the Endangered Species Act.

The Liddell Creek area is also designated critical habitat for the California red-legged frog, listed as threatened under the Federal Endangered Species Act (USFWS 2010). This species is thought to utilize all of the creeks on C-CD for summer habitat. Other sensitive wildlife resources within the watershed include habitat for bats, raptors, and San Francisco dusky-footed woodrat.

The Liddell Creek area contains associations of significant cultural resources, culturally significant landscape features, and ethnobiological resources identified by the Amah Mutsun Tribal Band. Pre-contact cultural resources in C-CD include sites where food gathering and preparation occurred, as well as lithics.

Classification

Lower portions of the Liddell Creek watershed support active and fallow agriculture and contain farm worker housing and farm structures. The county-maintained Bonny Doon Road runs along portions of the creek. Upstream of the BLM-managed segment of this creek, the City of Santa Cruz's Liddell Spring water diversion diverts water for domestic use. The tentative classification of this segment is scenic.

Yellow Bank Creek

Description

Yellow Bank Creek's watershed is prototypical of the general character of C-CD - it rises from sandy beaches and coastal terraces through grassland and coastal scrub to the heavily wooded conifer forest interior at the top of the Property. Yellow Bank Creek has no surface water connection to the ocean. The stream passes through two bore tunnels under the railroad tracks and Highway 1. At the location where the creek exits the downstream bore onto the beach, a 3-foot drop with a very shallow plunge pool may present a migration barrier during parts of the year. Upstream of the reservoir formed by Yellow Bank Dam, natural stream reaches provide both spawning and rearing habitat for salmonids. Due to the presence of this dam, Yellow Bank Creek is not considered free-flowing.

Yellow Bank Creek itself is a small perennial stream that supports a landlocked population of rainbow trout, due to the presence of three migration barriers near the mouth of the stream. Other sensitive resources within the watershed include California red-legged frog, native grasslands, live oak woodlands, redwoods, riparian communities, a high number of raptors, limestone cliffs that may provide nesting habitat for peregrine falcons, and cultural artifacts. Although the coastal terraces are relatively narrow compared to the other terraces on the Property, they still support row crop agriculture. Grasslands are leased for grazing.

Outstandingly Remarkable Values

The Yellow Bank Creek area is designated critical habitat for the California red-legged frog, listed as threatened under the Federal Endangered Species Act (USFWS 2010). This species is thought to utilize all of the creeks on C-CD for summer habitat. Other sensitive wildlife resources within the watershed include habitat for bats, raptors, and San Francisco dusky-footed woodrat.

In 2018, the BLM constructed two off-channel ponds for California red-legged frog. These ponds are already being utilized by the species, although breeding has not yet been documented on site.

Classification

There are numerous existing roads in the Yellow Bank Creek and Laguna Creek watersheds, including routes (or ways) used by grazing leaseholders and the City of Santa Cruz Water Department. An old dam is located just upstream of the BLM property boundary. Due to the presence of these features, the tentative classification is recreational.

Laguna Creek

Description

The majority of the Laguna Creek watershed is located outside of C-CD. Portions of the watershed within the Property include the lower portion of Laguna Creek and the majority of the Y Creek sub-watershed. The upper portions of the watershed are leased for grazing, while the lower portions support row crop agriculture.

Although Laguna watershed has a low erosion hazard potential, portions of the watershed are underlain by the highly erosive Santa Margarita and Lompico Sandstones. Laguna Creek was assigned a moderate rating for both acute and chronic turbidity, indicating that sedimentation is an issue (ESA 2001). Laguna Creek originates near Ben Lomond Mountain and enters the Pacific Ocean just below the BLM property boundary.

Outstandingly Remarkable Values

Both Laguna Creek and Y Creek support anadromous steelhead and are designated critical habitat for this species, listed as threatened under the Endangered Species Act (NOAA Fisheries 2005).

The Laguna Creek area is designated critical habitat for the California red-legged frog, listed as threatened under the Federal Endangered Species Act (USFWS 2010). This species is thought to utilize all the creeks on C-CD for summer habitat. Other sensitive wildlife resources within the watershed include habitat for bats, raptors, and San Francisco dusky-footed woodrat.

The Laguna Creek area contains associations of significant cultural resources, culturally significant landscape features, and ethnobiological resources identified by the Amah Mutsun Tribal Band. Pre-contact cultural resources in C-CD include sites where food gathering and preparation occurred, as well as lithics.

Classification

The City of Santa Cruz claims a pre-1914 right to appropriate from Laguna Creek, recorded with the SWRCB as Statement of Water Diversion and Use 2042. There are numerous existing roads in the Laguna Creek watershed, including numerous routes used by grazing leaseholders and the City of Santa Cruz Water Department. The tentative classification is scenic.

III. Eligible Segments

The eligibility study for C-CD has determined that three of the segments evaluate met the criteria of free-flowing and possessed at least one ORV. During the suitability phase of the WSR Act process, the support of and coordination with other landowners and users will be analyzed for eligible segments. Table 2 summarizes the eligibility evaluation of all identified river segments. The table includes information on stream segments managed by BLM at C-CD, including the length on BLM property, acreage of BLM property within 0.25 miles of each segment, free-flowing status, outstandingly remarkable value(s), and tentative classification.

Table 2: Wild & Scenic River Inventory for Cotoni-Coast Dairies

River Name/Segment	BLM Length (mi.)	BLM Acres within 0.25 miles	Free Flowing	ORVs ¹	Tentative Classification		
					Wild	Scenic	Recreational
Molino Creek	0.728	376	N	E,F			
Agua Puerca Creek	2.629	768	N	E,F			
San Vicente Creek	4.127	1,069	Y	E,F		X	
Liddell Creek	6.851	1,544	Y	E,F,G		X	
Yellow Bank Creek	2.558	823	N	F			
Laguna Creek	3.173	858	Y	E,F,G		X	

1. Outstandingly Remarkable Values

- A – Non-existent
- B – Scenery
- C – Recreation
- D – Geology
- E – Fish
- F – Wildlife
- G – Cultural
- H – Historical
- I - Other

IV. Suitability of Rivers and Streams

The BLM’s policy, direction, and guidance for identifying, evaluating, planning, and managing eligible and suitable WSRs and managing designated components of the National System is contained in Manual 6400, Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, Planning, and Management (BLM 2012).

This section describes the determinations made during the suitability evaluation for the C-CD RMPA. Three stream segments within the C-CD were determined to be eligible for inclusion in the National System (see **Table 3** and the RMPA/EA Appendix A: **Figure 11**).

Table 3. Eligible Stream Segments

River Name/Segment	BLM Length (mi.)	Eligibility Classification
San Vicente Creek	4.127	Scenic
Liddell Creek	6.851	Scenic
Laguna Creek	3.173	Scenic

SUMMARY OF SUITABILITY FINDINGS

As documented in this report, one river segment was found suitable for inclusion into the National System: San Vicente Creek (Table 4, below).

Table 4. Segments Determined Suitable for Inclusion in the National System

River Segment	Length under BLM administration (miles)	Outstandingly Remarkable Value(s)	Tentative Classification
San Vicente Creek	4.127	T&E species	Scenic

Rationale

San Vicente Creek would make a worthy addition to the NWSRS for the following reasons:

- In contrast with all other streams originating from the C-CD, San Vicente Creek contains outstandingly remarkable values that are unique when viewed within the context of the California Coast Range Physiographic Province.
- Magnificent (redwood forest) scenic views, extensive research and educational opportunities for stewardship in the C-CD unit of the CCRMP.
- Excellent spawning and rearing habitat exist for Federally listed threatened steelhead and coho salmon, as well as Federally listed California red-legged frog.

- The presence of these known fisheries is also related to the cultural and historical values of the San Vicente Creek, as well as on-going efforts in the region to protect these values.
- Designation would preserve and protect the rivers' free-flowing character, water quality, and outstandingly remarkable values mentioned above.
- A commitment has been demonstrated by the local community and non-federal entities to work collaboratively with BLM in implementing protective management.
- No land ownership or potential uses would be in conflict or curtailed if these river segments were designated.
- No costs would be involved in acquiring necessary lands and interest in lands, because protective management would only apply to lands already managed by BLM.

SUITABILITY EVALUATIONS AND DETERMINATIONS

California has approximately 189,454 miles of river, of which 1,999.6 miles are designated as wild & scenic—1% of the state's river miles (website: <https://www.rivers.gov/california.php>, visited on June 30, 2020). River segments in the C-CD unit of the CCONM are located within the California Coast Range Physiographic Province. In the Northern Coast Ranges there are more than 400 miles of designated Wild & Scenic Rivers, including the Black Butte River, Van Duzen River, the Main Stem & Middle Fork of the Eel River, and the entire South Fork Eel River. In the Central Coast Ranges, the designated “wild” Big Sur River (19.5 miles) is the only designated river segment in the Central Coast Field Office. There are no coastal streams in the Southern Coast Ranges that are designated part of the system.

In accordance with NEPA and the WSR Act, BLM used an interdisciplinary planning team to analyze an array of alternatives for WSRs in the Draft RMPA/EA. As described in the draft plan, none of the eligible river segments be managed as suitable under Alternative A, three river segments managed as suitable under Alternative B, two river segments managed as suitable under Alternative C. Following review of public comments on the draft plan and suitability criteria, one river segment would be managed as suitable under Alternative D (Preferred Alternative) in the Proposed RMPA/EA.

The three river segments under evaluation have similar land tenure status, historical uses, and potential or existing uses. Therefore, the primary distinction for suitability of C-CD streams is the outstandingly remarkable values that make them worthy additions to the NWSRS. Although each of the eligible river segments have anadromous fisheries and/or cultural values, when considered in the context of several other rivers in the region, the BLM planning team found that two river segments did not meet suitability standards that would make them worthy additions to the system.

After a suitability analysis, which is documented in this section, one of the three eligible segments were found suitable for inclusion in the National System: San Vicente Creek; because it exceeds multiple suitability standards, as defined in BLM Manual 6400. Individual maps of the suitable segments and an overview map of the inventoried and eligible rivers are included in the C-CD Proposed RMPA/EA, Appendix A: Figure 11.

In selecting the one segment found suitable in Alternative D, the planning team determined that San Vicente Creek represents the ‘crown jewel’ of the Cotoni-Coast Dairies unit of the CCONM with its wild character, scenic beauty, and many other outstandingly remarkable values described in the following section. These river-related values are destined for the benefit of surrounding communities and visitors alike, making this stream a truly worthy addition to the NWSRS.

SAN VICENTE CREEK

Corridor Description

San Vicente Creek is a 9.3-mile-long coastal stream originating in the San Vicente Redwoods on the west facing slopes of the Santa Cruz Mountains, flowing through C-CD and the town of Davenport on its way to the Pacific Ocean. The San Vicente Redwoods is an 8,532-acre area held under a private conservation trust by the Sempervirens Fund, Peninsula Open Space Trust and Save the Redwoods League to protect the area from subdivision and development. About half (4.1 miles) of the length of San Vicente Creek occurs within C-CD. There are 1,069 acres managed by the BLM within 0.25 miles of the creek.



Figure 4. San Vicente Creek

As displayed in Figure 4 (above), Reach 1 consists of the mouth of the creek flowing across the beach. Reach 2 includes the railroad crossing (an artificial bore through bedrock), the Highway 1 crossing (a box culvert) and the short, open stretch between the two. Reach 3 is relatively wide and consists primarily of riffles with a few pools approximately 2 to 3 feet deep. Slack water habitat for young-of-the-year salmonids is abundant and between 500 and 700 recently emerged steelhead were observed. Yearlings-and-older salmonids were also observed in some pools.

An off-channel reservoir located in Reach 3 has been identified by researchers as excellent rearing habitat. However, while small fish can easily enter this pond, escapement of smolts is not as certain. Therefore, officials with the National Marine Fisheries Service, US Fish and Wildlife Service, and California Department of Fish and Wildlife (CDFW) have made several attempts to remove vegetation and reconstruct the inlet and outlet to allow passage for all salmonid life stages since 2001.

Reach 4 has similar channel dimensions, habitat diversity, and substrate composition as Reach 3, although riparian shading in this section amounts to only about 50 percent. Young-of-the-year and yearlings were observed throughout. The reach offers good salmonid habitat, including several deep pools installed during a restoration projects and the replacement of a bridge in the upstream portion of the reach.

Reach 5 continues with similar channel dimensions as the previous two reaches, but the vegetation quickly transitions from a deciduous riparian zone to mixed evergreens, primarily redwoods. Riffles and runs dominate the reach, with significant pools being fairly sparse (again, most significant pools are associated with CDFW restoration structures). Isolated bank failures have occurred adjacent to the access road running alongside the channel. The average width of Reach 6 is somewhat narrower than previous reaches, but substrate and embeddedness (50-60 percent) characteristics are similar. The reach also contains further bank failures associated with the access road.

Eighty-five percent of the watershed has an elevation of less than 1,960 feet. About 64 percent of the watershed is in the 0-10 percent slope class. Only about 5 percent of the watershed has slopes in excess of 20 percent. Limestone and shale quarrying in the uplands of San Vicente Creek removed the soil and chaparral and forest vegetation. The quarries have been abandoned for more than 20 years. Vegetation recruitment on the quarry floors and on tailings piles has consisted primarily of a mix of non-native annual and perennial grasses and forbs; non-native shrubs including French broom and pampas grass; pioneer native woody species including coyote brush and California sagebrush; and planted (restoration) native trees including knobcone pine and Douglas fir.

Landownership and Land Uses

The majority of San Vicente Creek occurs within the San Vicente Redwoods and C-CD. However, a large portion of San Vicente Creek's physical watershed is leased by Cemex cement, where mining activities included a large shale quarries; several abandoned quarries; conveyor line; and an extensive road network; operations have now ceased and reclamation activities are underway. The old San Vicente Railroad alignment, which cuts across the north side of the canyon high above the creek, is a private in-holding. Lower portions of the watershed support residential housing and structures associated with the town of Davenport, which has dozens of privately owned lots situated immediately adjacent to the BLM-managed lands along the floodplains of the lower portion of San Vicente Creek.

Mineral and Energy Resource Activities

Shale was mined from the San Vicente Creek watershed. There is no federal mineral estate associated with the property, and Proclamation 9563 withdrew the C-CD from entry under the mining laws, so there is no potential for mineral and energy resource development in the watershed.

Water Resources Development

Diversions on San Vicente Creek and on Mill Creek, a tributary of San Vicente Creek, provide the sole source of domestic water to the town of Davenport. Water is conveyed via pipelines (approximately 4.2 miles from the San Vicente Creek diversion and 3.5 miles from the Mill Creek diversion) to a water tank and sediment collector known as the “sandbox” which is located on the property currently owned by Cemex, a cement plant that has been near Davenport since about 1905. Historically the sandbox served as a junction point from which water can be delivered in one direction to the cement plant and in another direction to the town of Davenport. Water being conveyed to Davenport is sent to a treatment plant that is owned and operated by the County Sanitation District and located on Cemex property. From there it is distributed for municipal use throughout Davenport. The cement plant ceased operations in 2009 and it uses little to no water at this time. Davenport relies on water diverted from the sandbox to serve all its domestic and municipal needs. Before exiting to the Pacific Ocean, San Vicente Creek flows through the Highway 1 (box culvert) and railroad (artificial bore through bedrock) crossings.

Transportation, Facilities, and Other Developments

Before exiting to the Pacific Ocean, San Vicente Creek flows through the Highway 1 (box culvert) and railroad (artificial bore through bedrock) crossings. San Vicente Road, a large portion of which is a county-maintained road, parallels the lower end of the creek. At the BLM property boundary, the road becomes a gravel road and a bridge spans the creek. On BLM property, this road is used by BLM and contractors for administrative purposes and by CEMEX for ongoing remediation activities.

Recreation Activities

Under the preferred alternative, guided tours, educational visits, and hunting under a special permit are the only recreational opportunity proposed along San Vicente Creek. San Vicente Creek occurs in RMZ2 which does not contain any proposed trail development.

Other Resource Activities

The upper watershed of San Vicente Creek is subject to sustainable timber harvesting. Other resource activities include water uses for industrial reclamation, municipalities, and fish and wildlife protection.

Special Areas

No areas of critical environmental concern (ACECs), wilderness study areas (WSAs), or wilderness areas overlap the river corridor, but San Vicente Creek is within the California Coastal National Monument (CCNM). The CCNM is a component of the BLM’s National Conservation Lands (NCL). The mission of the NCL is to conserve, protect, and restore these nationally significant landscapes. As stated in Proclamation 9563, the C-CD contains significant scientific or historic resources that are closely tied to the values of the CCNM. Therefore, it is the landscape aspect that connects the C-CD with the various coastal ecosystems of which it is an important part. The landscape also links the C-CD to the local and regional communities, partners, and the general public. For example, it is the landscape that provides the opportunity for using the C-CD as a focal point to link regional conservation efforts and other coastal initiatives.

Socioeconomic Environment

San Vicente Creek passes through Davenport and is within Santa Cruz County. The small unincorporated community of Davenport has a population of approximately 400 people and includes residences, shops, restaurants, lodging, other visitor serving retail uses and Pacific Elementary School, a small public school (US Census 2010). The County of Santa Cruz was estimated to have a 2018 population of approximately 274,244 (refer to RMPA Appendix I). The North Coast area is used widely for recreational purposes, including hiking, running, biking, walking, surfing, and equestrian use. Travel and tourism and agriculture are prevalent in Santa Cruz County as reflected in the percent of employment in both these sectors, which are markedly higher than State and U.S. In addition to direct jobs associated with C-CD, future economic activity would support other secondary jobs established in the local communities. These jobs result from

indirect economic effects of tourism activity (purchases of goods and services by visitors). Both tourism and recreation have market components individually, which are heavily affected by BLM land use decisions.

Current Administration and Funding Needs if Designated

The BLM administers land within the San Vicente Creek river corridor. The BLM would work with nearby interested landowners to determine administrative needs if designated. In recent years, the BLM has partnered with upstream neighbors on stream and riparian restoration projects.

Suitability Criteria

Criteria 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Within San Vincente Creek, two ORVs have been identified as making this segment a worthy addition to the National System. ORVs for fish and wildlife were identified as unique, rare, or exemplary at a comparative regional or national scale.

The National Marine Fisheries Service has been stocking San Vicente Creek with coho salmon from a hatchery on nearby Scotts Creek since 2009. San Vicente Creek will remain a NOAA Fisheries focus for recovery of coho salmon populations (NMFS 2012). The federally listed Threatened Central and South-Central California Coast DPS (Distinct Population Segment) populations of steelhead have been confirmed to be present in San Vicente Creek.

San Vicente Creek also provides critical habitat for the federally listed threatened California red-legged frog. Hunting via special permit is the only recreational opportunities that is expected to be present along the C-CD managed portions of San Vicente Creek.

Criteria 2: Current status of landownership and use in the area

From the origin of San Vicente Creek in the Santa Cruz Mountains to the terminus at the Pacific Ocean, the BLM manages 1,069 acres of the stream corridor (44%). The remaining 2,430 acres are private land, much of it occurring within the San Vicente Redwoods. The last segment of San Vicente Creek flow through the town of Davenport. Zoning for the portion of San Vicente Creek downstream of C-CD is Single Family Residential.

Criteria 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified outstandingly remarkable values. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Coho salmon, steelhead, and California red-legged frogs would continue to be protected under the Endangered Species Act and further enhanced by the National System. Designation would complement the goals and objectives of the BLM.

All public lands within the authorized boundaries of a designated component of the NCL are withdrawn from entry, sale, or disposition under the public laws of the United States. The mineral estate is held in private ownership and many existing uses are maintained under water rights that may be affected with designation.

Uses that could be curtailed by designation could include downstream agricultural activities, which require water withdrawals, and upland uses such as cattle grazing. In addition, further development of water resources in this area for use by residents of Davenport could be impacted. These activities could continue

unless they are shown to affect the ORVs such that the segment would no longer be suitable for designation in the National System.

Criteria 4: The federal agency that will administer the area should it be added to the National System

The BLM manages the area as part of the California Coastal National Monument and would continue if the San Vicente Creek segment were added to the National System.

Criteria 5: The extent to which the agency proposes that administration of the river, including the costs thereof, is shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Criteria 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

Approximately half of the river corridor is on BLM-administered land. The other (upstream) half of San Vicente Creek is in the San Vicente Redwoods, which is owned by the Sempervirens Fund and subject to a conservation easement. The Santa Cruz County Board of Supervisors (and other interested parties) also expressed opposition to Federal acquisition of lands or interest in lands in the study area. As a result, acquisition of lands or interest in lands is not necessary (or feasible).

Criteria 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Cooperative efforts with the owners of San Vicente Redwoods would likely benefit ORVs in the river corridor. The fish and wildlife resources within the river corridor continue upstream into the San Vicente Redwoods, and shared participation in the preservation and administration of San Vicente Creek would support more consistent treatment of the ORVs.

Preservation and administration of the state-listed and federally listed species of coho salmon and California red-legged frogs within San Vicente Creek would also be supported by participation from state and federal agencies, including NOAA Fisheries, California Department of Fish and Wildlife (CDFW) and USFWS, who are both mandated to conserve listed resources.

Criteria 8: An evaluation of local zoning and other land use controls in protecting the river's outstandingly remarkable values and preventing incompatible development

The upstream portion of the river corridor is under a conservation easement with Save the Redwoods League and is zoned as agricultural, with an Agricultural Preserve or Farmland Security contract with the County to maintain the land in its natural state for 10-years. The purpose of the conservation easement is to protect lands from subdivision and development while allowing for sustainable timber harvesting, public access, restoration work and scientific research. The downstream portion of San Vicente Creek that flows through Davenport is classified as single-family residential.

Criteria 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the California Endangered Species Act (CESA). The CDFW also coordinates with other state and federal entities through

the Water Operations Unit. The Water Operations Unit coordinates with NOAA Fisheries and USFWS are on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal Endangered Species Act of 1973 (ESA) and the CESA.

The State Water Resources Control Board is responsible for water quality and is the state water pollution control agency for all purposes under the Clean Water Act (CWA). The Act prohibits the discharge of materials that adversely affect the beneficial uses of the waters of the State. The Regional Water Board has the authority to take enforcement action, ranging from a notice of violation to issuing administrative civil liabilities (fines) against persons who violate the Act or a permit.

Criteria 10: The existing support or opposition of designation

The public provided input regarding WSRs during public involvement opportunities supported the designation of San Vicente Creek for its outstandingly remarkable value for wildlife and anadromous fish. There were no comments opposed to designating San Vicente Creek as a WSR.

Criteria 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal Acts that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two Acts. Designation of San Vicente Creek as a WSR would support the goals and objectives of the CWA and the ESA. On a state level, the CWA, administered by the Central Coast Regional Board, enforces California water quality laws. Designation of San Vicente Creek as a WSR would be consistent with the Central Coast Regional Board's mission of protecting water quality.

Criteria 12: The contribution to river system or basin integrity

The limits to anadromous fisheries populations in San Vicente Creek are not clearly understood, but are related to water temperature, diet, and predation, which are, in turn, related to the availability of riparian habitat. In gross terms, all ecological problems in the creek are related to its function as an endpoint of in-river storage of sediment. Any management action that reduces the input of sediment into the river system will benefit aquatic habitat for fish. Furthermore, because coho populations are diminished to a point where their viability remains a question, WSR designation of the river segment under evaluation will contribute significantly to the integrity of the San Vicente Creek system as a whole.

Criteria 13: The potential for water resources development

There are no Federal Energy Regulatory Commission (FERC) projects proposed for San Vicente Creek. San Vicente Creek and Mill Creek (tributary) provide the drinking water for the unincorporated town of Davenport. There is substantial demand for water associated with agriculture and residential use in the region, so there may be interest in water resource development, but due to the existing rights and the presence of listed species the potential is low.

Land Use Plan Alternatives

In accordance with NEPA and the WSR Act, various combinations and alternative river classifications were considered. These alternatives were analyzed further with respect to the impacts of WSR designation on several resource management programs. These programs include recreation, transportation and travel management, livestock grazing, vegetation management (including the use of herbicides and fire), listed species protection, research, and monitoring.

Under all the action alternatives, including the Preferred Alternative, the BLM proposes restricted access to the San Vicente Creek watershed for the protection of sensitive resources, including areas with high densities of cultural resources, and critical habitat for steelhead and coho salmon. Emphasis on conservation in the stream corridor is consistent with management of private lands on the adjacent San Vicente Redwoods property, providing a large block of undisturbed habitat for wildlife. For these reasons, public access would be limited in these areas to guided tours and permitted access, including infrequent archery hunting opportunities. By precluding trail development and restricting public access in this zone, the BLM is minimizing potential adverse impacts to wildlife from habitat fragmentation and human presence.

Refer to the Cotoni-Coast Dairies Proposed RMPA/EA (BLM 2020) Chapter VI, Environmental Consequences for analysis of the impacts of designation on these programs.

Suitability Determination

San Vicente Creek was found **suitable** for inclusion in the National System. Designation of San Vicente Creek may contribute to more consistent management of the ORVs.

Location: See Proposed RMPA/EA, Appendix A: Figure 11.

Total Segment Length: 4.1 miles.

LIDDELL CREEK

Corridor Description

Liddell Creek originates in three locations in Ben Lomond Mountain. The west fork originates north of Bonny Doon Road just outside C-CD on private lands south of the Bonny Doon Quarry. The main fork begins within C-CD near the Limestone Quarry, and the east fork originates in Liddell Spring just outside C-CD on a parcel owned by the City of Santa Cruz. The three branches of the creek combine and exit to the Pacific Ocean at Bonny Doon Beach. There are 6.9 miles of Liddell Creek that flow through C-CD and 1,544 acres of river corridor within ¼ mile of the creek within C-CD, which comprises more than 90% of the total length and area. Limestone and shale quarrying in the uplands of Liddell Creek removed the soil and chaparral and forest vegetation. The quarries have been subject to on-going reclamation for almost 20 years. Vegetation recruitment on the quarry floors and on tailings piles has consisted primarily of a mix of non-native annual and perennial grasses and forbs; non-native shrubs including French broom and pampas grass; pioneer native woody species including coyote brush and California sagebrush; and planted (restoration) native trees including knobcone pine and Douglas fir.

Landownership and Land Uses

The majority of Liddell Creek occurs within the boundary of the C-CD. The City of Santa Cruz owns the parcel adjacent to C-CD where Liddell Spring is located. They procured the water rights surrounding Liddell Spring, Liddell Creek, and associated water rights, including downstream riparian rights in 1913. After crossing Highway 1, the downstream portion of Liddell Creek is managed by the state of California and is under consideration for addition to the State Park system. Lower portions of the Liddell Creek watershed support active and fallow agriculture and contain farm worker housing and farm structures.

Mineral and Energy Resource Activities

Large volumes of limestone and marble were historically removed from the Bonny Doon quarry (uplands of Liddell Creek).

Water Resources Development

The City of Santa Cruz holds senior water rights for Liddell Creek and withdraws a substantial amount of water from the creek. The City of Santa Cruz voluntarily maintains bypass flows sufficient for all salmonid life-stages in Liddell Creek to comply with CDFW regulations. The City submitted a draft Habitat Conservation Plan (HCP) to the regulatory agencies in 2011, and negotiations are presently underway to finalize new regulatory permits to continue operation of water supply sources for the benefit of the community as well as steelhead and other aquatic organisms in the Liddell Creek watershed.

Transportation, Facilities, and Other Developments

The main branch of Liddell Creek leaves the C-CD property at the intersection of Bonny Doon Road and Highway 1 where it flows through a bedrock tunnel (reinforced with concrete) under the highway and across the beach to the ocean. Upstream from this point, Liddell Creek runs parallel to Bonny Doon Road for approximately one mile along the west branch. The main branch and east branch include a series of unimproved logging roads that have not been maintained for several decades leading into the upper watershed. These unused roads terminate at the intersection with a larger road system that in the upper Liddell Creek watershed. This larger road system is also unimproved, but it is maintained for vehicle use to access the limestone quarry and the City of Santa Cruz properties.

Recreation Activities

Under the Preferred Alternative, the BLM proposes restricted access to the Liddell Creek watershed for the protection of sensitive resources, including areas with high densities of cultural resources. Public access would be limited in these areas to guided tours and permitted access, including infrequent archery hunting opportunities. By precluding trail development and restricting public access in this zone, the BLM is minimizing potential adverse impacts to wildlife from habitat fragmentation and human presence.

Other Resource Activities

Historically, the upper watershed of Liddell Creek was subject to intense timber harvesting. Nowadays, other resource activities that affect the stream include water uses for municipalities and fish and wildlife protection. Development activities associated with reclamation of quarries, light industrial uses, rural residences, and local roads are expected to continue within the northern-most portions of the Liddell Creek watershed.

Special Areas

No areas of critical environmental concern (ACECs), wilderness study areas (WSAs), or wilderness areas overlap the river corridor, but Liddell Creek is within the California Coastal National Monument (CCNM). The CCNM is a component of the BLM's National Conservation Lands (NCL). The mission of the NCL is to conserve, protect, and restore these nationally significant landscapes. As stated in Proclamation 9563, the C-CD contains significant scientific or historic resources that are closely tied to the values of the CCNM. The landscape also links the C-CD to local communities and regional conservation efforts.

Socioeconomic Environment

Most of the population in Santa Cruz County is located centrally in the urban and residential development areas that depend on drinking water that is delivered from the North Coast streams and rivers. The County of Santa Cruz was estimated to have a 2018 population of approximately 274,244 (Refer to RMPA/EA Appendix I). The North Coast area is used widely for recreational purposes, including hiking, running, biking, walking, surfing, and equestrian use. Travel and tourism and agriculture are prevalent in Santa Cruz County as reflected in the percent of employment in both these sectors, which are markedly higher than State and U.S. In addition to direct jobs associated with C-CD, future economic activity would support other secondary jobs established in the local communities. These jobs result from indirect economic effects

of tourism activity (purchases of goods and services by visitors). Both tourism and recreation have market components individually, which are heavily affected by BLM land use decisions.

Current Administration and Funding Needs if Designated

The BLM administers 6.9 miles of the land within the Liddell Creek river corridor. The BLM would work with local and state agencies to determine administrative needs if designated.

Suitability Criteria

Criteria 1: Characteristics that do, or do not, make the area a worthy addition to the National System

In 2018, juvenile coho salmon were discovered in Liddell Creek. The federally listed Threatened Central and South-Central California Coast Distinct Population Segment (DPS) populations of steelhead have been confirmed to be present in Liddell Creek.

The Liddell Creek area contains associations of significant cultural resources, culturally significant landscape features, and ethnobiological resources identified by the Amah Mutsun Tribal Band. Pre-contact cultural resources in C-CD include sites where food gathering and preparation occurred, as well as lithics.

Criteria 2: Current status of landownership and use in the area

The majority of the Liddell Creek river corridor occurs within the C-CD property. Liddell springs (the headwater of the east branch) is owned by the City of Santa Cruz. The west fork of Liddell Creek originates on private lands in Bonny Doon. The main fork originates within C-CD. The downstream portions (0.25 mile) is managed by the state of California as part of the State Parks system.

Criteria 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Steelhead and California red-legged frogs would continue to be protected under federal and state laws and be further enhanced by the National System.

All public lands within the authorized boundaries of a designated component of the National System would be withdrawn from entry, sale, or disposition under the public laws of the United States. Water right status and future applications may be limited with designation.

Further, any activity that affects the identified ORVs could be restricted. These activities could continue unless they are shown to affect the ORVs such that the segment would no longer be suitable for designation in the National System.

Criteria 4: The federal agency that will administer the area should it be added to the National System

If the Liddell Creek segment were added to the National System, the BLM would manage the land and resources within this boundary. The BLM currently administers approximately 6.9 miles of surface along Liddell Creek.

Criteria 5: The extent to which the agency proposes that administration of the river, including the costs thereof, is shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Criteria 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

Acquisition of lands or interest in lands is not necessary because there are no in-holdings, and more than 95% percent of the river corridor is already on BLM-administered land. The Santa Cruz County Board of Supervisors (and other interested parties) also expressed opposition to Federal acquisition of lands or interest in lands in the study area.

Criteria 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

Cooperative efforts with the City of Santa Cruz and the state of California would be likely to benefit ORVs in the river corridor. The fish and wildlife resources within the river corridor continue downstream and shared participation in the preservation and administration of Liddell Creek would support more consistent treatment of the ORVs.

Criteria 8: An evaluation of local zoning and other land use controls in protecting the river's outstandingly remarkable values and preventing incompatible development

The majority of Liddell Creek is zoned as Agricultural and has an Agricultural Preserve or Farmland Security contract with the County to maintain the land in its natural state for 10 years. The west branch of Liddell Creek originates on private land zoned as Agricultural with an owner executed open space easement contract with the County to maintain the land in its natural state for 10 years. Although small sections of Liddell Creek pass through areas zoned as Single Family Residential, Santa Cruz County ordinances, such as the Riparian Corridor and Wetlands Protection Ordinance, adopted to help protect wildlife and aquatic habitat, reduce flooding, and safeguard water quality and cultural and aesthetic values are expected to help protect the rivers ORVs and prevent incompatible development.

Criteria 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The CDFW has a mandate to protect native species threatened with extinction under the California Endangered Species Act. The CDFW also coordinates with other state and federal entities. The CDFW coordinates with NOAA Fisheries and USFWS on several fisheries technical teams that make recommendations for adjusting operations to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the federal ESA and the CESA.

Criteria 10: The existing support or opposition of designation

Public comments supported the WSR designation of Liddell Creek. There were no comments opposed to designating Liddell Creek as a WSR.

Criteria 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Liddell Creek as a WSR would support the goals and objectives of the CWA and ESA. On a state level, designation of Liddell Creek as a WSR would be consistent with the state's mission of protecting water quality.

Criteria 12: The contribution to river system or basin integrity

The limits to anadromous fisheries populations in Liddell Creek are not clearly understood, but a report created for the City of Santa Cruz by Hagar Environmental Science in 2012 describing existing conditions for steelhead and coho salmon, states that sedimentation may be the primary limiting factor in Liddell Creek and lists pool depth, cover, substrate, and spring season flows as additional limiting factors based on several other reports documenting conditions in Santa Cruz County streams (ESA 2001). Any management action that reduces the input of sediment into the river system will benefit aquatic habitat for fish. Furthermore, because coho populations are diminished to a point where their viability remains a question, WSR designation of the river segment under evaluation will contribute significantly to the integrity of the Liddell Creek system as a whole.

Criteria 13: The potential for water resources development

There is little to no potential for water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line to be proposed for Liddell Creek because the provision of water is contingent on there being water in the Santa Cruz Water Department's (SCWD) pipeline that crosses the property, and as such the provision of water is interruptible. Additionally, the SCWD maintains bypass flows from creek diversions to meet CDFW regulations. An increase in water withdrawals from the creek below the diversion site could have a direct impact at the City's compliance gage site downstream and therefore have a direct effect on City water operations. This could also have a direct impact on habitat availability for listed special-status anadromous salmonids such as coho and steelhead.

Land Use Plan Alternatives

In accordance with NEPA and the WSR Act, various combinations and alternative river classifications were considered. These alternatives were analyzed further with respect to the impacts of WSR designation on several resource management programs. These programs include recreation, transportation and travel management, livestock grazing, vegetation management (including the use of herbicides and fire), listed species protection, research, and monitoring. Refer to the Cotoni-Coast Dairies Proposed RMPA/EA (BLM 2020) Chapter VI, Environmental Consequences for analysis of the impacts of designation on these programs.

Under the Preferred Alternative, the BLM proposes restricted access to the Liddell Creek watershed for the protection of sensitive resources, including areas with high densities of cultural resources, and critical habitat for steelhead and coho salmon. For these reasons, public access would be limited in these areas to guided tours and permitted access, including infrequent archery hunting opportunities. By precluding trail development and restricting public access in this zone, the BLM is minimizing potential adverse impacts to wildlife from habitat fragmentation and human presence.

Suitability Determination

Liddell Creek was found **not suitable** for inclusion in the National System.

LAGUNA CREEK

Corridor Description

Laguna Creek, originating in Ben Lomond Mountain, flows for 8.5 miles and culminates in a lagoon just before it enters the Pacific Ocean. Approximately 3.1 miles of Laguna Creek, following the southeasternmost boundary of the property, are within the C-CD, associated with 853 acres of BLM-managed river corridor. Several smaller tributaries enter Laguna Creek, the most notable of which are Reggiardo Creek and Y Creek. The confluence of Reggiardo Creek and Laguna Creek occur north of the

C-CD. Y Creek originates within the C-CD flows for 1.6 miles before joining Laguna Creek. Portions of the watershed within the Property include the lower portion of Laguna Creek and the majority of the Y Creek sub-watershed. The upper portions of the watershed are leased for grazing, while the lower portions support row crop agriculture.

Landownership and Land Uses

The majority of the Laguna Creek watershed is located outside of C-CD. Portions of the watershed within the C-CD include the lower portion of Laguna Creek and the majority of the Y Creek sub-watershed.

Mineral and Energy Resource Activities

There are no mineral and energy resource activities in the Laguna Creek riparian area.

Water Resources Development

The City of Santa Cruz claims a pre-1914 right to appropriate from Laguna Creek, recorded with the SWRCB as Statement of Water Diversion and Use 2042 and diverts nearly 100% of the headwaters. The City submitted a draft Habitat Conservation Plan (HCP) to the regulatory agencies in 2011, and negotiations are presently underway to finalize new regulatory permits to continue operation of water supply sources for the benefit of the community as well as steelhead and other aquatic organisms in the Laguna Creek watershed. There are two diversions outside of C-CD on Reggiardo and Laguna Creeks that have been prioritized for removal under the Draft City of Santa Cruz Habitat Conservation Plan Conservation Strategy for Steelhead and Coho Salmon, released on August 10, 2011. Levees that had formerly constrained the creek and lagoon were removed prior to 2010 and restored using native plants.

Transportation, Facilities, and Other Developments

Laguna Creek is located along the southern boundary of the C-CD property line and empties into the Pacific Ocean at Laguna Beach after it flows through a culvert beneath Highway 1. At this location, a portion of Laguna Road parallels Laguna Creek for about 1/3 mile and serves as a driveway for a private residence. The remainder of Laguna Road is closed to public access by a locked gate. The road is regularly maintained and used by local agencies to access utilities.

Recreation Activities

Under all action alternatives, including the Preferred Alternative, the BLM proposes restricted access to the Laguna Creek watershed for the protection of sensitive resources, including areas with high densities of cultural resources. For these reasons, public access would be limited in these areas to guided tours and permitted access, including infrequent archery hunting opportunities. By precluding trail development and restricting public access in this zone, the BLM is minimizing potential adverse impacts to wildlife from habitat fragmentation and human presence.

There is a (retired) agricultural parcel that was part of the former Coast Dairies property on the inland side of Highway 1 where Laguna Creek and Laguna Road form the southern boundary of the C-CD unit of the CCNM. This parcel of land was donated to the California State Parks for public use and enjoyment, but to date there are no plans to promote recreation within ¼ mile of Laguna Creek.

Other Resource Activities

Historically, the upper watershed of Laguna Creek was subject to intense timber harvesting. Nowadays, other resource activities include water uses for irrigation, municipalities, and fish and wildlife protection.

Special Areas

No areas of critical environmental concern (ACECs), wilderness study areas (WSAs), or wilderness areas overlap the river corridor, but Laguna Creek is within the California Coastal National Monument (CCNM). The CCNM is a component of the BLM's National Conservation Lands (NCL). The mission of the NCL is to conserve, protect, and restore these nationally significant landscapes. As stated in Proclamation 9563, the C-CD contains significant scientific or historic resources that are closely tied to the values of the CCNM. Therefore, it is the landscape aspect that connects the C-CD with the various coastal ecosystems of which it is an important part. The landscape also links the C-CD to the local and regional communities, partners, and the general public. For example, it is the landscape that provides the opportunity for using the C-CD as a focal point to link regional conservation efforts and other coastal initiatives.

Socioeconomic Environment

The County of Santa Cruz was estimated to have a 2018 population of approximately 274,244 (refer to RMPA/EA, Appendix I). Standard measures of growth and decline are population, employment, and real personal income. Trends indicate the population, employment, and real personal income in Santa Cruz County increased at a greater rate than the rest of California and the U.S. from 1970 – 2018. Long-term, steady growth of population, employment, and real personal income is generally an indication of a healthy, prosperous economy. Growth can benefit the general population of a place, especially by providing economic opportunities, but it can also stress communities and lead to income stratification. If the population growth trend in this region continues for the next 10 years, Santa Cruz County could see up to 25,000 additional residents in rural and urban locations during the life of this plan.

The North Coast area is used widely for recreational purposes, including hiking, running, biking, walking, surfing, and equestrian use. Travel and tourism and agriculture are prevalent in Santa Cruz County as reflected in the percent of employment in both these sectors, which are markedly higher than State and U.S. In addition to direct jobs associated with C-CD, future economic activity would support other secondary jobs established in the local communities. These jobs result from indirect economic effects of tourism activity (purchases of goods and services by visitors). Both tourism and recreation have market components individually, which are heavily affected by BLM land use decisions.

Current Administration and Funding Needs if Designated

The BLM only administers the Y Creek tributary and other lands that are adjacent to the Laguna Creek river corridor. The BLM would have to work with interested landowners to determine administrative needs if designated.

Suitability Criteria

Criteria 1: Characteristics that do, or do not, make the area a worthy addition to the National System

Steelhead, coho salmon, California red-legged frogs and the federally listed endangered Tidewater goby have been recorded in Laguna Creek. The Tidewater goby occur downstream from the C-CD boundary where the creek forms an estuary before joining the Pacific Ocean. Laguna Creek is one of two NOAA Fisheries focus areas on the C-CD for recovery of coho salmon populations (NOAA Fisheries 2012). Other sensitive wildlife resources within the watershed include habitat for bats, raptors, and San Francisco dusky-footed woodrat.

The Laguna Creek area contains associations of significant cultural resources, culturally significant landscape features, and ethnobiological resources identified by the Amah Mutsun Tribal Band. Pre-contact cultural resources in C-CD include sites where food gathering and preparation occurred, as well as lithics.

Criteria 2: Current status of landownership and use in the area Landownership within Laguna Creek's watershed is a combination of federal (BLM), state and local government and private lands. The BLM manages 858 acres (less than 10 percent) of land within the Laguna Creek corridor. Upper Laguna Creek and Lower Laguna Creek are predominantly private lands develop for residents or ranching operations.

Criteria 3: Reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National System

The basic objectives of designation are to maintain the river's existing condition and protect the identified outstandingly remarkable values. Designation would enhance fish and wildlife populations by helping to preserve existing habitat. Steelhead, coho salmon, and California red-legged frogs would continue to be protected under the ESA and further enhanced by the National System. Designation would complement the goals and objectives of the Draft City of Santa Cruz Habitat Conservation Plan Conservation Strategy for Steelhead and Coho Salmon, released on August 10, 2011, and state (CDFW) and federal organizations (BLM and USFWS).

Designation could prohibit development of hydroelectric power facilities. Currently, there are no applications for dams or diversions on file for this river segment.

All public lands within the authorized boundaries of a designated component of the National System would be withdrawn from entry, sale, or disposition under the public laws of the United States. However, these lands are already withdrawn as part of the National Monument designation. Water right status and future applications may be limited with designation.

Designation of Laguna Creek could affect private land use and development of the surrounding land. Designation may influence development by limiting vegetation management practices and may establish further requirements regarding maintenance and development of private lands. Compliance measures to existing laws and regulations may be more consistently and routinely monitored and enforced.

Criteria 4: The federal agency that will administer the area should it be added to the National System

If Laguna Creek segment was added to the National System, the BLM would be most suited to manage the land and resources within this boundary, unless Congress designated another agency. The BLM currently administers 3.1 miles of Laguna Creek. No other portion of Laguna Creek is currently under federal management, making the BLM the most suitable federal agency to manage Laguna Creek.

Criteria 5: The extent to which the agency proposes that administration of the river, including the costs thereof, is shared by state and local agencies

The BLM would encourage state and local agency cooperation in the management and maintenance of the river corridor, where appropriate, to meet overall goals of river protection. Administration and funding would be determined in cooperation with state and local agencies after designation.

Criteria 6: The estimated cost of acquiring necessary lands or interests in land within the corridor, as well as the cost of administering the area should it be added to the National System

The BLM does not currently plan to pursue land acquisition from willing sellers within the river corridor.

Criteria 7: The extent that other federal agencies, the state, or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the National System

The City of Santa Cruz, CDFW, NOAA Fisheries, and USFWS have all participated in the administration of Laguna Creek. If the river were not included in the National System, federal, state and local land management agencies could continue to protect land under their jurisdiction for the riparian values and ORVs along the river area under existing laws, authorities, and ordinances. Applicable laws would include the ESA, the CWA, the CESA, and California Water Code.

Criteria 8: An evaluation of local zoning and other land use controls in protecting the river's outstandingly remarkable values and preventing incompatible development

The majority of Laguna Creek is zoned as Agricultural. Santa Cruz County ordinances, such as the Riparian Corridor and Wetlands Protection Ordinance, adopted to help protect wildlife and aquatic habitat, reduce flooding, and safeguard water quality and cultural and aesthetic values are expected to help protect the rivers ORVs and prevent incompatible development.

Criteria 9: The state/local government's capacity to manage and protect the ORVs on nonfederal lands

A variety of local, state, and governmental agencies and commercial, private, and nonprofit entities have a role in planning for, providing, and managing recreation and open space resources and services in the State of California.

The City of Santa Cruz has ordinances, such as the Riparian Corridor and Wetlands Protection Ordinance, adopted to help protect wildlife and aquatic habitat, reduce flooding, and safeguard water quality and cultural and aesthetic values. The CDFW has a mandate to protect native species threatened with extinction under the CESA. The CDFW coordinates with other state and federal entities including NOAA Fisheries and USFWS to minimize adverse effects on state- and federally listed fish species and to ensure compliance with the ESA and the CESA. The Coastal Commission helps regulate development in the coastal zone.

Criteria 10: The existing support or opposition of designation

Public comments supported the WSR designation of Laguna Creek. There were no comments opposed to designating Laguna Creek as a WSR.

Criteria 11: The consistency of designation with other agency plans, programs, and policies in meeting regional objectives

Laguna Creek is identified as a NOAA Fisheries focus areas on the C-CD for recovery of coho salmon populations (NOAA Fisheries 2012). The designation of Laguna Creek as a WSR would be consistent with the goals and objectives of the recovery plan.

The upper portion Laguna Creek passes through the Bonny Doon Ecological Reserve. The ESA and the CWA are two federal laws that are meant to provide for the recovery and preservation of endangered and threatened species and the quality of the nation's waters. The BLM is required to assist in implementing these two laws. Designation of Laguna Creek as a WSR would support the goals and objectives of the CWA and ESA.

Criteria 12: The contribution to river system or basin integrity

Most of the Laguna Creek watershed is outside the C-CD property. Y Creek is the informal name for a tributary to Laguna Creek that flows through the southeastern part of the C-CD. One of the branches of the City of Santa Cruz's water supply lines crosses the creek and joins the other branch of the supply line on the east bank of the creek. The creek became known as Y Creek because the pipeline junction or "Y" is on its bank. The watershed above this junction encompasses about 0.79 square miles. There is a bedrock cascade just downstream that is assumed to be a barrier to salmonid migration. Therefore, WSR designation

of the river segment under evaluation would not contribute significantly to the integrity of the Laguna Creek system as a whole.

Criteria 13: The potential for water resources development

There is little to no potential for new water resources developments, such as a dam, water conduit, reservoir, powerhouse, or transmission line to be proposed for Laguna Creek because the provision of water is contingent on there being water in the Santa Cruz Water Department's (SCWD) pipeline that crosses the property, and as such the provision of water is interruptible. Additionally, the SCWD maintains bypass flows from creek diversions to meet CDFW regulations. An increase in water withdrawals from the creek below the diversion site could have a direct impact at the City's compliance gage site downstream and therefore have a direct effect on City water operations. This could also have a direct impact on habitat availability for listed special-status anadromous salmonids such as coho and steelhead.

Land Use Plan Alternatives

In accordance with NEPA and the WSR Act, various combinations and alternative river classifications were considered. These alternatives were analyzed further with respect to the impacts of WSR designation on several resource management programs. These programs include recreation, transportation and travel management, livestock grazing, vegetation management (including the use of herbicides and fire), listed species protection, research, and monitoring.

Under all the action alternatives, including the Preferred Alternative, the BLM proposes restricted access to the Laguna Creek watershed for the protection of sensitive resources, including areas with high densities of cultural resources, and critical habitat for steelhead and coho salmon. Emphasis on conservation in the stream corridor is consistent with management of private lands on the adjacent San Vicente Redwoods property, providing a large block of undisturbed habitat for wildlife. For these reasons, public access would be limited in these areas to guided tours and permitted access, including infrequent archery hunting opportunities. By precluding trail development and restricting public access in this zone, the BLM is minimizing potential adverse impacts to wildlife from habitat fragmentation and human presence.

Refer to the Cotoni-Coast Dairies Proposed RMPA/EA (BLM 2020) Chapter VI, Environmental Consequences for analysis of the impacts of designation on these programs.

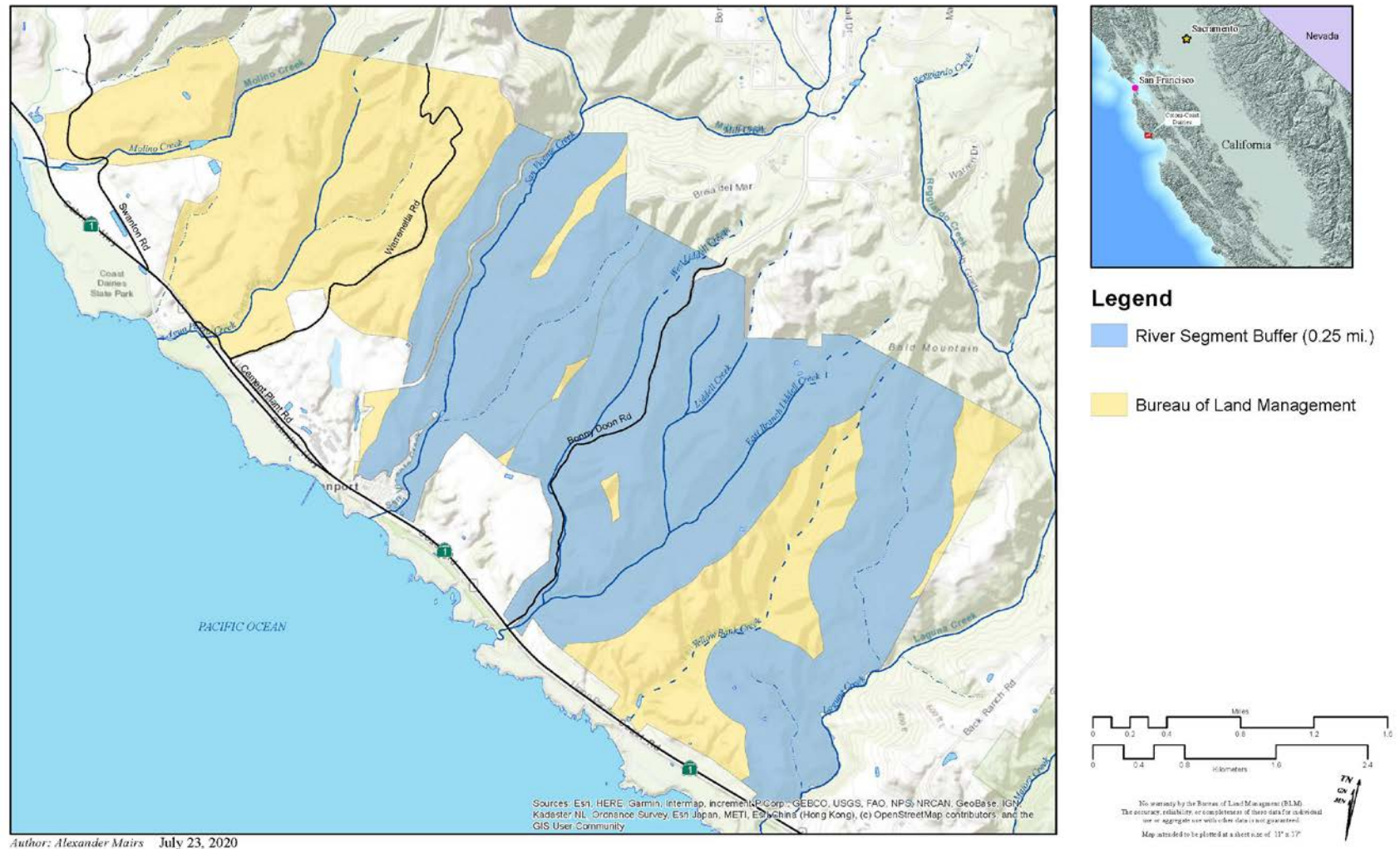
Suitability Determination

The Laguna Creek segments were identified as **not suitable** for inclusion based on information within this report. Nonetheless, there has been a remarkable degree of cooperation between local, state, and federal agencies to foster conservation of the biological resources and preserve the river corridor itself. The existing framework recognizes a need to provide a balance between water supply for the federally listed anadromous fish population and water needed for ranching and production of agriculture.

References

- California Coastal Commission. (1987). The California Coastal Resource Guide. University of California Press. 384 pages.
- McGinnis, S. M. (1991). An evaluation of the anadromous fish spawning and parr rearing habitats of the Liddell and San Vicente Creek systems, Santa Cruz County, California. Prepared for RMC Lonestar, October 25, 1991.
- [ESA] Environmental Science Associates. (2004). *Coast Dairies long-term resource protection and use plan: existing conditions report for the coast dairies property*. Prepared for the Trust for Public Land. San Francisco, CA. 360 pp.
- [NOAA Fisheries] National Oceanic and Atmospheric Administration National Marine Fisheries Service. (1999). Designated critical habitat; Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. Federal Register 64:24049-24062.
- [NOAA Fisheries] National Oceanic and Atmospheric Administration National Marine Fisheries Service. (2005). Endangered and threatened species designation of critical habitat for seven evolutionarily significant units of Pacific salmon and steelhead in California; Final Rule. Federal Register 70:170:52487-52564.
- [RCD] Resource Conservation District of Santa Cruz County. (2014). San Vicente Creek Watershed Plan for Salmonid Recovery. http://www.rcdsantacruz.org/images/watershed_plans/sv-existing-cond-report-final-2014-04-09-low-res.pdf.
- [US Census] US Census. (2010). 2010 Census. Retrieved from <https://www.census.gov/programs-surveys/decennial-census/decade.2010.html>
- [USFWS] U.S. Fish and Wildlife Service. (2010). Endangered and threatened wildlife and plants: Revised designation of Critical Habitat for California Red-legged Frog; Final Rule. Federal Register 75:51:12816-12959.

Figure 11: Cotoni-Coast Dairies Wild & Scenic River Inventory



RMPA Appendix A, Figure 11. Cotoni-Coast Dairies Wild and Scenic River Study

Appendix F: Cotoni-Coast Dairies Weed Management Plan

INTRODUCTION

This Cotoni-Coast Dairies Weed Management Plan is a general plan for prioritizing and controlling the most invasive, non-native plant species (weeds) using an adaptive management approach. As part of this adaptive strategy, weed management priorities and strategies will be modified over time, based on inventory and monitoring results. Prioritization, implementation, and evaluation of weed treatments will be based on 1) wildfire risk due to accumulations of fine fuels around Day Use Areas and other infrastructure, 2) adverse impacts of weeds to rangeland (grassland) quality, and 3) impacts of weeds to native species and their communities, particularly special status species.

Adaptive management relies on an inventory and monitoring program that includes regular inventory of the area to detect and map the distribution, abundance, and spread of new and established infestations and monitoring to track the outcomes of implemented weed treatments. Early detection and rapid response (EDRR) is the most efficient and cost-effective method of dealing with any invasive species. In order to implement EDRR, it is critical to have the tools available to enable early detection of - and rapid response to - new weed invasions.

Photomonitoring and casual monitoring with a GPS will be used to document and quantify existing weed infestations. Regular, casual survey (patrol) with a GPS will be used to detect and document new weed invasions. Emphasis will also be placed in preventing new infestations through education and BMPs. Priorities for weed management actions will emphasize: 1) mitigation of wildfire risk by reducing fine fuel loads near potential ignition sources (e.g. tall weeds around Day Use Areas), 2) control of highly undesirable weeds that adversely impact rangelands (e.g. thistles in grasslands), and 3) control of weeds that adversely impact native vegetation and habitat of native species, particularly special status species (e.g. cape ivy in riparian zones).

Tools and methods for treating and managing invasive weeds will include: 1) manual (i.e. hand-pulling), 2) mechanical (i.e. mowing), 3) targeted livestock grazing, 4) prescribed fire; and 5) herbicide treatment. Integrated Pest Management (IPM) is an effective and environmentally sensitive approach that optimizes control of weeds, while minimizing risks to human health, beneficial and non-target organisms, and the environment. IPM focuses on managing either the ecosystem that supports the weed or the weed species directly to reduce establishment, reproduction, dispersal, and survival.

CONFORMANCE WITH APPLICABLE LAND USE PLANS

The proposed action would be subject to the Cotoni-Coast Dairies amendment to the California Coastal National Monument Resource Management Plan that is being considered in this RMPA/EA.

Relationship to statutes, regulations, and other plans

The Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 1712) states that the BLM must manage public lands according to the principles of multiple use and sustained yield. The Public Rangelands Improvement Act of 1978 requires that BLM manage, maintain, and improve the condition of public rangelands for optimal productivity. The Carson-Foley Act (43 USC 1241) of 1968 directs agency leads to enter upon lands under their jurisdiction and control noxious, invasive plant species. BLM Departmental Manual 517 prescribes policy for the use of pesticides on the lands and waters under its jurisdiction, and for compliance with the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. BLM Departmental Manual 609 prescribes policy to control noxious, invasive plant species on the lands, waters, or facilities under its jurisdiction to the extent that is economically feasible, and as needed for resource protection and accomplishment of resource management objectives. BLM Manual 9011 and Handbook H-9011-1 provide policy for conducting chemical pest control programs under an Integrated Pest Management approach.

This Plan is tiered to the following documents -

- 2007 Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Final Programmatic Environmental Impact Statement
- 2016 Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement

All herbicides and adjuvants used must be approved for use on BLM land and must be registered for use in California. Herbicide application will comply with the label, BLM policy and applicable federal and state laws. Cotoni-Coast Dairies is not located within an EPA Pesticide Use Limitation Area (PULA) for any herbicide type application during any time of year.

WEED SPECIES of CONCERN at COTONI-COAST DAIRIES

Three categories of weeds have significant impacts on natural resources at C-CD, including 1) Non-native, tall, broadleaf annuals in grasslands, 2) Non-native perennial vines in riparian areas, and 3) Non-native woody shrubs and large perennial grasses in coastal scrub and abandoned quarries (**Figure F.1**)

- 1) **Non-native, tall, broadleaf annuals in grasslands** include Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), black mustard (*Brassica nigra*), summer mustard (*Hirschfeldia incana*), radish (*Raphanus sativus*), and poison hemlock (*Conium maculatum*). These weeds form tall, dense patches in grasslands and directly compete with native grasses and forbs of the native grassland vegetation type. Purple starthistle (*Centaurea calcitrapa*) is also a non-native annual species of concern that occurs in non-native grasslands. These weeds present a fine fuel fire hazard in close proximity to Day Use Areas and infrastructure and also adversely impact grassland habitat and rangeland quality. These weed species (weedy/ruderal patches) are most common at C-CD in annual

grassland areas of Terrace 2 of proposed RMZs #1, #2, and #3. The estimated total project area for the control of non-native, tall, broadleaf annuals in grasslands is 600 acres.

- 2) **Non-native perennial vines in riparian areas** include cape ivy (*Delairea odorata*) and old man's beard (*Clematis vitalba*). These weeds form dense cloaks that smother native riparian plant species and degrade riparian vegetation structure, resulting in degradation of the wetland and riparian habitat that supports several special status fish and amphibian species. These weed species are most common in riparian areas of proposed RMZ #1 including Agua Puerca Creek and proposed RMZ #2 including San Vicente Creek and Liddell Creek. The estimated total project area for the control of non-native perennial vines in riparian areas is 100 acres.
- 3) **Non-native woody shrubs and large perennial grasses in coastal scrub** include French broom (*Genista monspessulana*) and pampas grass (*Cortaderia jubata*). These weeds form dense stands that directly compete with native shrub species of the coastal scrub vegetation type. These weeds are most common at C-CD in drastically disturbed areas including the quarries (abandoned) and along road edges in coastal scrub of proposed RMZs #1 and #2. The estimated total project area for the control of non-native woody shrubs and large perennial grasses in coastal scrub is 100 acres.

Prioritization of weed treatments will generally follow as: 1) Non-native, tall, broadleaf annuals in grasslands, 2) Non-native perennial vines in riparian areas, and 3) Non-native woody shrubs and large perennial grasses in coastal scrub. The methods utilized to control each weed species will be dependent upon several factors including plant growth form (herbaceous forb vs. woody shrub vs. vine), plant life cycle (annual vs. perennial), habitat type (upland terrestrial vs. riparian area and wetland), potential to adversely impact non-target species, and potential to impact other resources and activities at C-CD.

METHODS of WEEDS CONTROL

Non-native, tall, broadleaf annuals in grasslands

Due to their annual life cycle, herbaceous growth form, and widespread distribution in grasslands, the control of non-native broadleaf annuals is best accomplished by livestock grazing and mowing (**Figure F.1**). Cattle are present within most of the grassland area grazing allotments of C-CD. The balance in dominance between the less competitive annual grasses and more competitive non-native, tall, broadleaf annuals in grasslands of C-CD, is largely influenced by the intensity of cattle grazing. Intensive grazing favors annual grass cover and native forbs, while the lack of grazing promotes dominance of non-native, tall, broadleaf annuals (Popay and Field 1996; Hayes and Holl 2003; Stromberg et al. 2007; Sotoyome RCD 2019). Management of cattle grazing will be the primary method of control for non-native, tall, broadleaf annuals in grasslands of C-CD. Some areas of grassland within allotments at C-CD are undergrazed by cattle due to poor access across steep terrain or lack of water availability in the uplands. Range improvements are proposed including placing water troughs in upland areas and updating fencing to encourage more even grazing across the grasslands of C-CD.

Within and around fenced Day Use Areas and around other infrastructure in grasslands, annual mowing will be used as the primary method to reduce fine fuel loads and wildfire risk. Mowing will also be used to reduce tall weeds along trails, roads, and fire breaks. Mowing equipment may include a mower attachment to a tractor, riding mower, walk-behind mower, or weedeaters. The total estimated annual area of non-native, tall, broadleaf annuals and non-native grasslands subject to mowing is 50 acres.

In some cases, herbicide will be used in place of grazing and mowing to treat weeds within and around Day Use Areas, other infrastructure, trails, roads, and fire breaks. The non-selective, post-emergent herbicide Glyphosate (liquid) will be broadcast applied with small-scale ground-based application methods including a backpack sprayer (spot spraying) and spray boom on a motorized vehicle (UTV; broadcast spraying). The use of Glyphosate will be primarily limited to situations where vegetation presents a wildfire risk, but the risk of wildfire caused by a blade mower would be even higher. The non-selective, pre-emergent herbicides Diuron and Tebuthiuron (solid, granular) will be locally applied by hand operated spreaders to small areas of the soil where complete removal of any herbaceous annual plant growth and bare ground is desired for several years. The application of Diuron and Tebuthiuron will be entirely limited to around Day Use Areas and infrastructure. No Diuron or Tebuthiuron treatments will be conducted in grasslands accessible to livestock.

In areas where non-native, tall broadleaf annuals are persistent in large areas of grasslands despite efforts to control them with livestock grazing and mowing, broadcast applications of selective herbicides will be conducted. The selective herbicides only control broadleaf annual plant species and do not affect grasses. These herbicide applications will be primarily undertaken in conjunction with efforts to restore non-native grassland to native grassland.

The selective, post-emergent, herbicides Dicamba and 2,4-D (liquid) will be applied to specifically control only broadleaf annual plant species (Ditomaso et al. 2013). Both Dicamba and 2,4-D are California Restricted Materials with exceptions for use of small quantities in small areas (CDPR 2020). These two herbicides would only be used in small quantities on small areas for native grassland restoration and research. The selective, post-emergent, herbicides Aminopyralid and Clopyralid (liquid) will be applied to specifically control only annual aster species (e.g. thistles; Ditomaso et al. 2013). Only small-scale, ground-based application methods will be used to apply herbicides, including: 1) backpack sprayer with spray wand (spot spraying), and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying). Per the herbicide product labels, there are no restrictions on grazing grasslands following application of Dicamba, 2,4-D, Aminopyralid, and Clopyralid. The total estimated annual area of non-native, tall, broadleaf annuals and non-native grasslands subject to treatment with herbicide is 50 acres.

Prescribed fire may be used to reduce fine fuel loads and the abundance on non-native grasses and forbs in order to restore native grasslands. The total estimated annual area of non-native, tall, broadleaf annuals and non-native grasslands subject to prescribed fire treatment is 10 acres.

Non-native perennial vines in riparian areas

Non-native perennial vines present special challenges to control since they are tangled with native riparian vegetation and grow from extensive rhizome systems in the soil. Additionally, they grow in very close proximity to surface water. The control of non-native perennial vines focuses on manual removal by cutting, removal, and disposal of vines (**Figure F.1**). The highest level of control is achieved with application of aquatic formulations of Glyphosate and Triclopyr to resprouts (DiTomaso et al. 2013). Due to the dense riparian vegetation and close proximity to surface water, the herbicide application method is limited to a backpack sprayer with a spray wand (spot spraying). The total estimated annual area of non-native perennial vines in riparian areas subject to treatment with herbicide is 5 acres.

Non-native woody shrubs and large perennial grasses in coastal scrub

Non-native woody shrubs and large grasses typically grow on very steep slopes. Although Pampas grass has very short-lived seed (<1 year) and has no persistent seed bank, French broom has very long lived seed (50+ years) and forms a large, persistent seed bank (Ditomaso et al. 2013). Non-native woody shrubs and large grasses can be removed manually by hand pulling or mechanical grubbing (shovel, pick axe, or weed wrench; **Figure F.1**). More extensive infestations may be more effectively controlled with foliar applications of Glyphosate and Triclopyr (Ditomaso et al. 2013). Due to their location on steep slopes and away from roads, a backpack sprayer with a spray wand (spot spraying) may be the only option for herbicide application. The very long-lived, persistent soil seed bank of French broom that it continually emerges from necessitates dedicated, long-term monitoring and control to achieve eradication. The total estimated annual area of non-native woody shrubs and large perennial grasses subject to treatment with herbicide is 20 acres.

	Locations	TARGET WEEDS																															
		Annuals					Perennials					Vegetation type					Purpose			Control method				Herbicides									
		Non-native grasses	Non-native thistles	Non-native mustards	Non-native radishes	Non-native posion hemlock	Non-native cape ivy	Non-native old man's beard	Non-native french broom	Non-native pampas grass	Riparian zone	Weedy/ruderal patch	Non-native grassland	Native grassland	Coastal scrub	Quarries (abandoned)	Reduce weeds introduction	Control existing weeds	Reduce fuel loads (fire hazard)	Cattle grazing	Mower/weedeater	Manual removal - pulling	Backpack sprayer - spot spray	UTV sprayer - broadcast spray	Glyphosate	Dicamba	2,4-D	Aminopyralid	Clopyralid	Triclopyr	Diuron	Tebuthiuron	
Day Use Areas - parking lots	X	X	X	X	X	.	.	.	.	.	X	X	.	.	.	X	X	X	.	1	2	2	3	3	3	3	3	3	3	3	3	3	3
Trails, roads, fire breaks	X	X	X	X	X	.	.	X	X	.	X	X	X	X	X	X	X	X	1	2	2	3	3	3	3	3	3	3	3	.	.	.	
Rangelands - terraces	X	X	X	X	X	.	.	X	X	.	X	X	X	X	.	X	X	X	1	2	2	3	3	3	3	3	3	3	3	.	.	.	
Wildlands - steep hillslopes	.	.	.	.	.	.	.	X	X	.	.	.	.	X	X	X	X	X	.	1	1	2	.	2	.	.	.	.	.	.	.	.	
Perennial creeks	.	.	.	.	.	X	X	.	.	X	.	.	.	.	.	X	X	.	.	.	1	2	.	2	.	.	.	.	.	2	.	.	

Figure F.1. Summary of the target locations at C-CD for the control of non-native plant species, including target weeds at each location, vegetation type, purpose of control, control method, and herbicides to be used. The prioritization strategy for the use of control methods is indicated by **1** (primary), **2** (secondary), and **3** (tertiary). Non-native plant species control emphasizes the use of cattle grazing first (where appropriate), then manual control methods, and finally, herbicide control methods last.

HERBICIDE DESCRIPTIONS

Glyphosate

Glyphosate is a non-selective, post-emergent, systemic herbicide. It is active on all plant species. It is soluble in water and applied as a spray to foliage. The target season interval for application of Glyphosate to control any types of emergent weeds at C-CD will be any time of the year; however, application during the Winter rainy season will be avoided.

Dicamba

Dicamba is a selective, pre-emergent and post-emergent, systemic herbicide. It is active on broadleaf annuals. It is soluble in water and applied as a spray to foliage. The target season interval for application of Dicamba to control non-native broadleaf annuals in grasslands at C-CD will be Spring (March – April), when broadleaf annuals are at the rosette stage. Dicamba is a California Restricted Material with exceptions for use of small quantities in small areas (CDPR 2020). This herbicide would only be used in small quantities on small areas for native grassland restoration and research.

2,4-D

2,4-D is a selective, pre-emergent and post-emergent, systemic herbicide. It is active on broadleaf annuals. It is soluble in water and applied as a spray to foliage. The target season interval for application of 2,4-D to control non-native broadleaf annuals in grasslands at C-CD will be Spring (March – April), when broadleaf annuals are at the rosette stage. 2,4-D is a California Restricted Material with exceptions for use of small quantities in small areas (CDPR 2020). This herbicide would only be used in small quantities on small areas for native grassland restoration and research.

Aminopyralid

Aminopyralid is a selective, post-emergent, systemic herbicide. It is most active on annual aster species (Asteraceae). It is soluble in water and applied as a spray to foliage. The target season interval for application of Aminopyralid to control non-native thistles in grasslands at C-CD will be Spring (March – April), when the thistles are at the rosette stage.

Clopyralid

Clopyralid is a selective, post-emergent, systemic herbicide. It is most active on annual aster species (Asteraceae). It is soluble in water and applied as a spray to foliage. The target season interval for application of Clopyralid to control non-native thistles in grasslands at C-CD will be Spring (March – April), when the thistles are at the rosette stage.

Triclopyr

Triclopyr is a selective, post-emergent, systemic herbicide. It is soluble in water and applied as a spray to foliage. The target season interval for application of Triclopyr to control non-native perennial vines at C-CD will be during the Spring and Summer (March – September).

Diuron

Diuron is a non-selective, pre-emergent, systemic herbicide. It is a granular solid that is applied to the soil surface and kills all seedlings as they emerge. The target season interval for application of Diuron to Day Use Areas at C-CD to control all emerging plant seedlings will be Fall (September - October), just prior to the first fall rains.

Tebuthiuron

Tebuthiuron is a non-selective, pre-emergent, systemic herbicide. It is a granular solid that is applied to the soil surface and kills all seedlings as they emerge. The target season interval for application of Tebuthiuron to Day Use Areas at C-CD to control all emerging plant seedlings will be Fall (September - October), just prior to the first fall rains.

HERBICIDE ANALYSIS OF EFFECTS

Analysis of effects is tiered to the 2007 Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Final Programmatic Environmental Impact Statement (BLM 2007b), and the 2016 Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM 2016). Where relevant, site-specific effects are analyzed for conditions specific to C-CD.

Factors that Influence the Fate, Transport, and Persistence of Herbicides

The fate and transport of herbicides in soil is a function of their interaction with the soil environment, and is a complex process. Chemical, physical, and biological soil processes influence herbicide availability, phytotoxicity, and fate and transport. Herbicides dissipate from soils by immobilization through adsorption onto soil surfaces, by transport with water, or through chemical or biological degradation processes.

Adsorption to soil surfaces is the most influential factor on the fate and transport of herbicides in soils. Adsorption occurs onto clay particles and organic matter. Adsorption affects herbicide mobility and availability to organisms, which in turn influences herbicide fate. The lower the adsorption of an herbicide to soil, the higher the mobility in soil. Transport with water is the primary mode of herbicide movement off of the application area. The higher the mobility of an herbicide is in soil and the higher the rainfall (leaching), the higher the probability that an herbicide will be transported off of the application site.

Photodegradation and biodegradation are the two common degradation pathways for herbicides in the environment. Degradation of herbicide results in a chemical transformation that replaces portions of the herbicide's active ingredient chemical structure, rendering it inactive. The length of time that an herbicide remains active in the soil is called soil persistence or soil residual life. The life of herbicide in soil is typically expressed as half-life – the time it takes for half of the mass of an herbicide to degrade and disappear.

Glyphosate

Air Quality

Glyphosate is not a volatile compound, therefore it has no effects on air quality.

Soil Resources

Glyphosate is soluble in water. It is strongly adsorbed to soil and has no mobility in soil. The herbicide is inactivated by adsorption to soil. Glyphosate has a half-life in soil of 47 days. Glyphosate has no direct effect on soil resources.

Water Resources and Quality

Non-aquatic formulations of Glyphosate will be applied in terrestrial uplands. Aquatic formulations of Glyphosate will be applied in wetlands and riparian areas. Glyphosate applied in terrestrial uplands is strongly adsorbed to soil and deactivated. Glyphosate applied in wetlands and riparian zones dissipates rapidly from surface water through adsorption to soil. Due to the rapid, strong attraction and binding to soil particles, Glyphosate does not remain dissolved in water as runoff from terrestrial uplands or in wetlands and riparian zones. Therefore, Glyphosate has no effect on water resources or water quality.

Wetland and Riparian Areas

Non-aquatic formulations of Glyphosate will be applied in terrestrial uplands. Aquatic formulations of Glyphosate will be applied in wetlands and riparian areas. Glyphosate applied in terrestrial uplands is strongly adsorbed to soil and deactivated. Glyphosate applied in wetlands and riparian zones dissipates rapidly from surface water through adsorption to soil. Due to the rapid, strong attraction and binding to soil particles, Glyphosate does not remain dissolved in water as runoff from terrestrial uplands or in wetlands and riparian zones. Therefore, Glyphosate has no effect on water resources in wetlands and riparian areas. Spot spray applications of Glyphosate to non-native perennial vines in wetlands and riparian areas has the potential for some overspray and impact to non-target, native vegetation. The undesirable impact to non-target, native vegetation would be localized and short-term and the native vegetation would rapidly recover.

Vegetation

Non-aquatic formulations of Glyphosate will be applied in terrestrial uplands. Aquatic formulations of Glyphosate will be applied in wetlands and riparian areas. Spot spray applications of Glyphosate have the potential for some overspray and impact to non-target, native vegetation. The undesirable impact to non-target, native vegetation would be localized and short-term and the native vegetation would rapidly recover.

Fish and Other Aquatic Organisms

Non-aquatic formulations of Glyphosate will be applied in terrestrial uplands. Aquatic formulations of Glyphosate will be applied in wetlands and riparian areas. Glyphosate applied in terrestrial uplands is strongly adsorbed to soil and deactivated. Glyphosate applied in wetlands and riparian zones dissipates rapidly from surface water through adsorption to soil. Due to the rapid, strong attraction and binding to soil particles, Glyphosate does not remain dissolved in water as runoff from terrestrial uplands or in wetlands and riparian zones. Rodeo has been shown to affect larval stages of frogs and to interfere with the protective microbial film on the skin of frogs

(Krynak and Benard 2017). This has the potential to expose frogs to many diseases including chytrid (McCoy and Peralta 2018). Freshwater zooplankton (found in wetlands and ponds) show toxicity dependent on the levels of application (Huaraca et al. 2020). Care should be taken not to let spray enter critical habitat for salmonids as the effects on young of the year are unknown.

Wildlife Resources

Direct spray of Glyphosate to insects and small mammals poses a low risk at the typical rate and a moderate risk at the maximum application rate. Insectivores consuming large quantities of insects incidentally sprayed with Glyphosate are at low risk of exposure. Herbivores consuming large quantities of grass and other vegetation treated with Glyphosate are at low risk of exposure. Risks of exposure of wildlife to Glyphosate will be mitigated by only treating relatively small areas of vegetation in any given year, leaving the vast majority of vegetation at C-CD untreated. Treating only a small amount every year will increase native pollinator plants. Native Bees are negatively affected by Glyphosate (Motta et al. 2018, Sponsler et al. 2019). Surveys for these bees should be done and the phenology of their nectar sources assessed prior to planning spraying. Since bees track their nectar sources and these shift as the season progresses a time for spraying could be worked out so as not to impact native bees.

Livestock

Non-aquatic formulations of Glyphosate will be applied in terrestrial uplands. Aquatic formulations of Glyphosate will be applied in wetlands and riparian areas. Cattle at C-CD spend the majority of time grazing in terrestrial uplands, primarily in grasslands, and spend little to no time in densely vegetated riparian zones. The probability of livestock encountering and consuming Glyphosate treated non-native perennial vines in the dense riparian zone vegetation is very low, therefore the overall risk of Glyphosate exposure in that setting is very low. Control of herbaceous annual plant growth with Glyphosate application will be conducted around Day Use Areas, other infrastructure, trails, roads, and fire breaks. The control may use a combination of spot spraying and narrow width broadcast spraying of strips (< 5 feet wide) along existing, developed linear features. The majority of these Glyphosate treatment areas would be located in grasslands accessible to cattle. Cattle consuming Glyphosate contaminated vegetation face low acute risk scenarios involving the typical application rate, moderate acute risk for scenarios involving the maximum application rate, and low chronic risk for scenarios involving the maximum application rate. Based on label directions, there are no restrictions on livestock use of Glyphosate treated areas. Risks of exposure of livestock to Glyphosate will be mitigated by only treating relatively small areas of vegetation in any given year, leaving the vast majority of vegetation at C-CD untreated.

Paleontological and Cultural Resources

Glyphosate may be applied to any vegetation type. Risks of treatment of cultural use sites or human exposure to Glyphosate from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

Glyphosate may be applied to vegetation types where the effects may be visible on the landscape. The target vegetation types where these effects may be most visible include the grasslands and coastal scrub. Control of herbaceous annual plant growth with Glyphosate application may be conducted around Day Use Areas, other infrastructure, trails, roads, and fire breaks. The control may use a combination of spot spraying and narrow width broadcast spraying of strips (< 5 feet wide) along existing, developed linear features. Treated areas may appear as brown spots and strips, paralleling and immediately adjacent to existing linear features. Since herbaceous annuals at C-CD generally senesce and turn brown in summer, the Glyphosate treated areas would only be visible for a few months, between March and May. Herbaceous annuals readily produce new growth every year, so Glyphosate treated areas of grassland would turn green again the following growing season. Glyphosate treated areas of grassland would have a negligible to minor, short-term effect on visual resources.

Control of non-native woody shrubs and large perennial grasses in coastal scrub could result in large patches of dead shrubs that may take several years to decompose. Native coastal scrub would take several years to fill in the vacant spaces. Most areas that would be targeted for the control of non-native woody shrubs and large perennial grasses, would be located in quarries (abandoned) which already appear as large disturbances on the landscape. Relative to the much larger scars of the quarries on the landscape, Glyphosate treated non-native woody shrubs and large perennial grasses would have a negligible effect on visual resources.

Recreation

Glyphosate will be applied to vegetation types in the vicinity of Day Use Areas and recreation trails. Due to the high degree of overlap of proposed recreation trails with vegetation types targeted for Glyphosate treatment, careful project-level planning will be necessary to minimize disruption to recreation and to prevent human exposure to herbicide. Certain Day Use Areas, trails, and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety.

Social and Economic Conditions

Glyphosate will be applied to vegetation types in the vicinity of Day Use Areas and recreation trails. Due to the high degree of overlap of proposed recreation trails with vegetation types targeted for Glyphosate treatment, careful project-level planning will be necessary to minimize disruption to recreation and to prevent human exposure to herbicide. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

Glyphosate will be applied to vegetation types in the vicinity of Day Use Areas and trails. Due to the high degree of overlap of proposed recreation trails with vegetation types targeted for Glyphosate treatment, careful project-level planning will be necessary to minimize disruption to recreation and to prevent human exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor

safety. For the routine application scenarios at the typical and maximum application rates, Glyphosate does not present a risk to workers or the public. Standard operating procedures will be followed for human safety including establishing buffer zones between treatment areas and residences and organic fields, using protective equipment as directed by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport, following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

Dicamba

Air Quality

Dicamba is a volatile compound, therefore it may directly affect air quality, but not significantly due to the small volumes of herbicide that would potentially be applied. Dicamba is a California Restricted Material with exceptions for use of small quantities in small areas (CDPR 2020). This herbicide would only be used in small quantities on small areas for native grassland restoration and research. Special precautions would be taken to prevent off-site drift of this volatile compound.

Soil Resources

Dicamba is soluble in water. It has high mobility in soil and does not bind to soil. Dicamba degrades to 3,6-dichlorosalicylic acid, which does bind strongly to soil. Dicamba has a half-life in soil of 14 days. Dicamba has no direct effect on soil resources.

Water Resources and Quality

Dicamba will not be applied to wetlands and riparian zones. Dicamba will only be applied to terrestrial uplands (grasslands). Dicamba is a California Restricted Material and will only be used in small quantities to small areas for native grassland restoration and research. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Dicamba has high potential to leach with surface water and to leach to groundwater due to its high mobility in soil. Leaching of Dicamba will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Dicamba should fully degrade. The half-life in soil is 14 days and the dry season is a minimum of 210 days.

Wetland and Riparian Areas

Dicamba will not be applied to wetlands and riparian zones. Dicamba will only be applied to terrestrial uplands (grasslands). A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Dicamba has high potential to leach with surface water and to leach to groundwater due to its high mobility in soil. Leaching of Dicamba will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April

– October) during which time Dicamba should fully degrade. The half-life in soil is 14 days and the dry season is a minimum of 210 days.

Vegetation

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Dicamba will be broadcast applied to grasslands to control non-native broadleaf annuals including thistles, mustard, radish, and poison hemlock. Application methods may include: 1) backpack sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying). No special status broadleaf annual plant species are known or suspected to occur in grasslands at C-CD. Due to the specificity of Dicamba to broadleaf annuals and the lack of native broadleaf annuals in the annual grasslands at C-CD, broadcast treatments of Dicamba are expected to primarily impact non-native broadleaf annuals. No grass species will be affected by the Dicamba treatments. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent contamination of surface water by spray drift. Special precautions would be taken to prevent off-site drift of this volatile compound.

Fish and Other Aquatic Organisms

Dicamba will not be applied to wetlands and riparian zones. Dicamba will only be applied to terrestrial uplands. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Dicamba has high potential to leach with surface water and to leach to groundwater due to its high mobility in soil. Leaching of Dicamba will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Dicamba should fully degrade. The half-life in soil is 14 days and the dry season is a minimum of 210 days.

Wildlife Resources

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Direct spray of Dicamba at both typical and maximum application rates poses a moderate risk to insects and small mammals. Insectivores consuming large quantities of insects incidentally sprayed with Dicamba are at risk of exposure. Herbivores consuming large quantities of grass and other vegetation treated with Dicamba are at risk of exposure. Risks of exposure of wildlife to Dicamba will be mitigated by only treating relatively small portions of grazing allotments in any given year, leaving the majority of grasslands untreated.

Livestock

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Most of the treated grasslands would be within rangeland allotments grazed by cattle. Dicamba presents some risk to livestock under direct spray and ingestion scenarios. Risks of exposure of cattle to Dicamba will be mitigated by only treating portions of grazing allotments in any given year, removing cattle from the treatment areas prior to

herbicide application, and temporarily restricting cattle from the treatment areas for one year. The half-life of Dicamba is 14 days and a year (365 days) of exclusion of cattle from grazing in the treatment areas should be more than sufficient to mitigate exposure risk.

Paleontological and Cultural Resources

Dicamba will only be applied to grasslands in terrestrial uplands. Risks of treatment of cultural use sites or human exposure to Dicamba from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Application methods may include: 1) backpack sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying). Due to the specificity of Dicamba to broadleaf annuals, broadcast treatments of Dicamba are expected to only adversely impact non-native thistles, mustard, radish, and poison hemlock. All other grassland species will not be impacted and therefore, the treatments will have no significant visual effect on the vegetation or appearance of the landscape.

Recreation

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent human exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety.

Social and Economic Conditions

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent visitor exposure to herbicide. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to prevent visitor exposure to herbicide. Certain trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety. For the routine application scenarios at the typical and maximum application rates, Dicamba does not present a risk to workers or the public. Standard operating procedures will be followed for human safety.

including establishing buffer zones between treatment areas and residences and organic fields, using protective equipment as directed by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport, following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

2,4-D

Air Quality

2,4-D is not a volatile compound, therefore it has no effects on air quality.

Soil Resources

2,4-D is soluble in water. It has high mobility in soil and does not bind to soil. 2,4-D has a half-life in soil of 10 days. 2,4-D has no direct effect on soil resources.

Water Resources and Quality

2,4-D will not be applied to wetlands and riparian zones. 2,4-D will only be applied to terrestrial uplands. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. 2,4-D has high potential to leach with surface water and to leach to groundwater due to its high mobility in soil. Leaching of 2,4-D will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time, the 2,4-D should fully degrade. The half-life in soil is 10 days and the dry season is a minimum of 210 days.

Wetland and Riparian Areas

2,4-D will not be applied to wetlands and riparian zones. 2,4-D will only be applied to terrestrial uplands. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. 2,4-D has high potential to leach with surface water and to leach to groundwater due to its high mobility in soil. Leaching of 2,4-D will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time 2,4-D should fully degrade. The half-life in soil is 10 days and the dry season is a minimum of 210 days.

Vegetation

2,4-D is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. D 2,4-D will be broadcast applied to grasslands to control non-native broadleaf annuals including thistles, mustard, radish, and poison hemlock. Application methods may include: 1) backpack sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying).. No special status broadleaf annual plant species known or suspected to occur in grasslands at C-

CD. Due to the specificity of 2,4-D to broadleaf annuals and the lack of native broadleaf annuals in the annual grasslands at C-CD, broadcast treatments of 2,4-D are expected to primarily impact non-native broadleaf annuals. No grass species will be affected by the 2,4-D treatments. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift.

Fish and Other Aquatic Organisms

2,4-D will not be applied to wetlands and riparian zones. 2,4-D will only be applied to terrestrial uplands. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. 2,4-D has high potential to leach with surface water and to leach to groundwater due to its high mobility in soil. Leaching of 2,4-D will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time 2,4-D should fully degrade. The half-life in soil is 10 days and the dry season is a minimum of 210 days.

Wildlife Resources

2,4-D is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Direct spray of 2,4-D at both typical and maximum application rates poses a moderate risk to insects and small mammals. Insectivores consuming large quantities of insects incidentally sprayed with 2,4-D are at risk of exposure. Herbivores consuming large quantities of grass and other vegetation treated with 2,4-D are at risk of exposure. Risks of exposure of wildlife to 2,4-D will be mitigated by only treating relatively small portions of grazing allotments in any given year, leaving the majority of grasslands untreated.

Livestock

2,4-D is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Most of the treated grasslands would be within rangeland allotments grazed by cattle. 2,4-D presents some risk to livestock under direct spray and ingestion scenarios. Risks of exposure of cattle to 2,4-D will be mitigated by only treating portions of grazing allotments in any given year, removing cattle from the treatment areas prior to herbicide application, and temporarily restricting cattle from the treatment areas for one year. The half-life of 2,4-D is 10 days and a year (365 days) of exclusion of cattle from grazing in the treatment areas should be more than sufficient to mitigate exposure risk.

Paleontological and Cultural Resources

2,4-D will only be applied to grasslands in terrestrial uplands. Risks of treatment of cultural use sites or human exposure to 2,4-D from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Application methods may include: 1) backpack

sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying). Due to the specificity of 2,4-D to broadleaf annuals, broadcast treatments of 2,4-D are expected to only adversely impact non-native thistles, mustard, radish, and poison hemlock. All other grassland species will not be impacted and therefore, the treatments will have no significant visual effect on the vegetation or appearance of the landscape.

Recreation

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent human exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety.

Social and Economic Conditions

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent visitor exposure to herbicide. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

Dicamba is a California Restricted Material and will only be used in small quantities over small areas for native grassland restoration and research. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to prevent visitor exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety. Workers face low to moderate risk from direct spray of 2,4-D at the maximum application rates. Standard operating procedures will be followed for human safety including establishing buffer zones between treatment areas and residences and organic fields, using protective equipment as directed by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport, following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

Aminopyralid

Air Quality

Aminopyralid is not a volatile compound, therefore it has no direct effects on air quality. Localized, brief, minor to negligible impacts to air quality are possible due to activities that support

the herbicide applications. These may include exhaust emissions from motorized vehicles and particulate emissions (dust) from vehicle travel on unpaved roads.

Soil Resources

Aminopyralid is soluble in water. It has moderate mobility in soil and only weakly binds to soil. Aminopyralid has a half-life in soil of 32 days. Aminopyralid has no direct effect on soil resources.

Water Resources and Quality

Aminopyralid will not be applied to wetlands and riparian zones. Aminopyralid will only be applied to grasslands in terrestrial uplands. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Aminopyralid has moderate potential to leach with surface water and to leach to groundwater due to its moderate mobility in soil. Leaching of Aminopyralid will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Aminopyralid should fully degrade. The half-life in soil is 32 days and the dry season is a minimum of 210 days.

Wetland and Riparian Areas

Aminopyralid will not be applied to wetlands and riparian zones. Aminopyralid will only be applied to grasslands in terrestrial uplands. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Aminopyralid has moderate potential to leach with surface water and to leach to groundwater due to its moderate mobility in soil. Leaching of Aminopyralid will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Aminopyralid should fully degrade. The half-life in soil is 32 days and the dry season is a minimum of 210 days.

Vegetation

Aminopyralid will be broadcast applied to grasslands to control non-native annual thistles. Application methods may include: 1) backpack sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying). No special status annual plant species in the Asteraceae family are known or suspected to occur in grasslands at C-CD. Due to the high specificity of Aminopyralid to annual asters, broadcast treatments of Aminopyralid are expected to only adversely impact non-native annual thistles. All other grassland species should not be impacted. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift.

Fish and Other Aquatic Organisms

Aminopyralid will not be applied to wetlands and riparian zones. Aminopyralid will only be applied to grasslands in terrestrial uplands. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Aminopyralid has moderate potential to leach with surface water

and to leach to groundwater due to its moderate mobility in soil. Leaching of Aminopyralid will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Aminopyralid should fully degrade. The half-life in soil is 40 days and the dry season is a minimum of 210 days.

Wildlife Resources

Aminopyralid will only be applied to grasslands in terrestrial uplands. Aminopyralid applied at typical label rates is not likely to pose a risk to terrestrial animals.

Livestock

Aminopyralid will only be applied to grasslands in terrestrial uplands. Most of the treated grasslands would be within rangeland allotments grazed by cattle. Aminopyralid applied at typical label rates is not likely to pose a risk to terrestrial animals. Application of Aminopyralid at the maximum application rate poses a low chronic risk to large mammals consuming Aminopyralid contaminated vegetation. The most likely livestock risk scenario would be the consumption of contaminated grass across large areas by livestock. Risks of exposure of cattle to Aminopyralid will be mitigated by only treating portions of grazing allotments in any given year, removing cattle from the treatment areas prior to herbicide application, and temporarily restricting cattle from the treatment areas for one year. The half-life of Aminopyralid is 40 days and a year (365 days) of exclusion of cattle from grazing in the treatment areas should be more than sufficient to mitigate exposure risk.

Paleontological and Cultural Resources

Aminopyralid will only be applied to grasslands in terrestrial uplands. Risks of treatment of cultural use sites or human exposure to Aminopyralid from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

Aminopyralid will be broadcast applied to grasslands to control non-native annual thistles. Application methods may include: 1) backpack sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying).. Due to the high specificity of Aminopyralid to annual asters, broadcast treatments of Aminopyralid are expected to only adversely impact non-native annual thistles. All other grassland species should not be impacted and therefore, the treatments will have no significant visual effect on the vegetation or appearance of the landscape.

Recreation

Aminopyralid will only be applied to grasslands in terrestrial uplands. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent human exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety.

Social and Economic Conditions

Aminopyralid will only be applied to grasslands in terrestrial uplands. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent visitor exposure to herbicide. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

Aminopyralid will only be applied to grasslands in terrestrial uplands. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to prevent visitor exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety. There are no risks to public or occupational receptors associated with most of the anticipated typical and accidental exposure scenarios for Aminopyralid. Standard operating procedures will be followed for human safety including establishing buffer zones between treatment areas and residences and organic fields, using protective equipment as directed by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport, following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

Clopyralid

Air Quality

Clopyralid is not a volatile compound, therefore it has no direct effects on air quality. Localized, brief, minor to negligible impacts to air quality are possible due to activities that support the herbicide applications. These may include exhaust emissions from motorized vehicles and particulate emissions (dust) from vehicle travel on unpaved roads.

Soil Resources

Clopyralid is soluble in water. It has moderate mobility in soil and only weakly binds to soil. Clopyralid has a half-life in soil of 40 days. Clopyralid has no direct effect on soil resources.

Water Resources and Quality

Clopyralid will not be applied to wetlands and riparian zones. Clopyralid will only be applied to grasslands in terrestrial uplands. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Clopyralid has moderate potential to leach with surface water and to leach to groundwater due to its moderate mobility in soil. Leaching of Clopyralid will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Clopyralid should fully degrade. The half-life in soil is 40 days and the dry season is a minimum of 210 days.

Wetland and Riparian Areas

Clopyralid will not be applied to wetlands and riparian zones. Clopyralid will only be applied to grasslands in terrestrial uplands. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Clopyralid has moderate potential to leach with surface water and to leach to groundwater due to its moderate mobility in soil. Leaching of Clopyralid will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Clopyralid should fully degrade. The half-life in soil is 40 days and the dry season is a minimum of 210 days.

Vegetation

Clopyralid will be broadcast applied to grasslands to control non-native annual thistles. Application methods may include: 1) backpack sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying). No special status annual plant species in the Asteraceae family are known or suspected to occur in grasslands at C-CD. Due to the high specificity of Clopyralid to annual asters, broadcast treatments of Clopyralid are expected to only adversely impact non-native annual thistles. All other grassland species should not be impacted. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift.

Fish and Other Aquatic Organisms

Clopyralid will not be applied to wetlands and riparian zones. Clopyralid will only be applied to grasslands in terrestrial uplands. Sufficient buffer zones will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent surface water contamination by spray drift. Clopyralid has moderate potential to leach with surface water and to leach to groundwater due to its moderate mobility in soil. Leaching of Clopyralid will be mitigated by the target application interval being the onset of the dry season (March – April), followed by the long dry season (April – October) during which time Clopyralid should fully degrade. The half-life in soil is 40 days and the dry season is a minimum of 210 days.

Wildlife Resources

Clopyralid will only be applied to grasslands in terrestrial uplands. Clopyralid applied at typical label rates is not likely to pose a risk to terrestrial animals.

Livestock

Clopyralid will only be applied to grasslands in terrestrial uplands. Most of the treated grasslands would be within rangeland allotments grazed by cattle. Clopyralid applied at typical label rates is not likely to pose a risk to terrestrial animals. Application of Clopyralid at the maximum application rate poses a low chronic risk to large mammals consuming Clopyralid contaminated vegetation. Risks of exposure of cattle to Clopyralid will be mitigated by only treating portions of grazing allotments in any given year, removing cattle from the treatment area prior to herbicide

application, and temporarily restricting cattle from the treatment areas for one year. The half-life of Clopyralid is 40 days and a year (365 days) of exclusion of cattle from grazing in the treatment areas should be more than sufficient to mitigate exposure risk.

Paleontological and Cultural Resources

Clopyralid will only be applied to grasslands in terrestrial uplands. Risks of treatment of cultural use sites or human exposure to Clopyralid from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

Clopyralid will be broadcast applied to grasslands to control non-native annual thistles. Application methods may include: 1) backpack sprayer with spray wand (spot spraying) and, 2) spray wand and spray boom on motorized vehicle (UTV or full-sized vehicle; broadcast spraying). Due to the high specificity of Clopyralid to annual asters, broadcast treatments of Clopyralid are expected to only adversely impact non-native annual thistles. All other grassland species will not be impacted and therefore, the treatments will have no significant visual effect on the vegetation or appearance of the landscape.

Recreation

Clopyralid will only be applied to grasslands in terrestrial uplands. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent human exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety.

Social and Economic Conditions

Clopyralid will only be applied to grasslands in terrestrial uplands. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to minimize disruption to recreation and to prevent visitor exposure to herbicide. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

Clopyralid will only be applied to grasslands in terrestrial uplands. Due to the high degree of overlap of proposed recreation trails with the grassland areas, careful project-level planning will be necessary to prevent visitor exposure to herbicide. Certain recreation trails and other recreation areas may be posted as temporarily closed during active herbicide application, for visitor safety. There are no risks to public or occupational receptors associated with most of the anticipated typical and accidental exposure scenarios for Clopyralid. Standard operating procedures will be followed for human safety including establishing buffer zones between treatment areas and residences and organic fields, using protective equipment as directed by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport,

following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

Triclopyr

Air Quality

Triclopyr is not a volatile compound, therefore it has no direct effects on air quality. Localized, brief, minor to negligible impacts to air quality are possible due to activities that support the herbicide applications. These may include exhaust emissions from motorized vehicles and particulate emissions (dust) from vehicle travel on unpaved roads.

Soil Resources

Triclopyr is soluble in water. It has high mobility in soil and does not bind to soil. Triclopyr salt degrades to triclopyr acid, which does bind strongly to soil. Triclopyr has a half-life in soil of 46 days. Triclopyr has no direct effect on soil resources.

Water Resources and Quality

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones. No adverse effects on water quality occur from application of this herbicide at label rates directly to surface water.

Wetland and Riparian Areas

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones. Spot spray applications of Triclopyr to non-native perennial vines in wetlands and riparian areas has the potential for some overspray and impact to non-target, native vegetation. The undesirable impact to non-target, native vegetation would be localized and short-term and the native vegetation would rapidly recover.

Vegetation

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones. Spot spray applications of Triclopyr to non-native perennial vines in wetlands and riparian areas has the potential for some overspray and impact to non-target, native vegetation. The undesirable impact to non-target, native vegetation would be localized and short-term and the native vegetation would rapidly recover.

Fish and Other Aquatic Organisms

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones. Total application rates will be relatively low due to spot treatment. When applied at the typical and maximum application rate, Triclopyr poses no risk to amphibians, fish or other aquatic invertebrates in streams or ponds under acute and chronic exposure scenarios.

Wildlife Resources

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones. Acute or accidental direct spray would pose a low to moderate risk to terrestrial insects and small mammals. Consumption of contaminated vegetation would pose a low to moderate risk to large mammals. Consumption of contaminated insects would pose a low to moderate risk to small birds. Total application rates will be relatively low due to spot treatment and the small, discontinuous areas of herbicide application should reduce the exposure risk to wildlife.

Livestock

An aquatic formulation of Triclopyr will be applied to non-native perennial vines in wetlands and densely vegetated riparian zones, where livestock spend little time. Triclopyr presents some risk to livestock, particularly through the consumption of contaminated vegetation. The probability of livestock encountering and consuming treated non-native perennial vines in the dense riparian zone vegetation is very low, therefore the overall risk of Triclopyr to livestock is very low.

Paleontological and Cultural Resources

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones. Risks of treatment of cultural use sites or human exposure to Triclopyr from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones. The relatively small, spot treatments will have no significant visual effect on the vegetation or appearance of the landscape.

Recreation

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones where little recreation or other visitor uses will occur except for certain stretches of creeks and creek crossings. Most of the spot treatments will be conducted in dense riparian vegetation and should not impact recreation activities.

Social and Economic Conditions

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones where little recreation or other visitor uses will occur except for certain stretches of creeks and creek crossings. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

An aquatic formulation of Triclopyr will be applied in wetlands and riparian zones where little recreation or other visitor uses will occur except for certain stretches of creeks and creek crossings. Workers face low risk from directed spray of Triclopyr at the maximum application rates. Standard operating procedures will be followed for human safety including establishing buffer zones between treatment areas and residences and organic fields, using protective equipment as directed

by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport, following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

Diuron

Air Quality

Diuron is not a volatile compound, therefore it has no direct effects on air quality. Localized, brief, minor to negligible impacts to air quality are possible due to activities that support the herbicide applications. These may include exhaust emissions from motorized vehicles and particulate emissions (dust) from vehicle travel on unpaved roads.

Soil Resources

Diuron is insoluble in water. It has moderate to low mobility in soil and only weakly binds to soil. Diuron has a half-life in soil of 90 days. Diuron has no direct effect on soil resources. Due to the long half-life and ability to completely control (remove) vegetative cover, there is potential for localized, minor, long-term soil erosion. Soil erosion would be mitigated by limiting the application of Diuron to relatively small areas which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion.

Water Resources and Quality

Diuron will not be applied to wetlands and riparian areas. Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent off-site transport in runoff to wetlands and riparian areas. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Diuron to relatively small areas which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off site transport.

Wetland and Riparian Areas

Diuron will not be applied to wetlands and riparian areas. Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent off-site transport in runoff to wetlands and riparian areas. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Diuron to relatively small areas which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off-site transport.

Vegetation

Diuron will only be applied to terrestrial uplands. A sufficient buffer zone will be maintained between treatment areas (Day Use Areas and infrastructure) and native vegetation to prevent off-site transport in runoff to sensitive native vegetation. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Diuron to relatively small areas, which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off-site transport.

Fish and Other Aquatic Organisms

Diuron will not be applied to wetlands and riparian areas. Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent off-site transport in runoff to wetlands and riparian areas. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Diuron to relatively small areas, which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off-site transport.

Wildlife Resources

Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. There are low acute and chronic risks for ingestion scenarios for small mammals, small birds, and large mammalian carnivores. It is highly likely that the frequent disturbance associated with concentrated visitor activity around the Day Use Areas will dissuade wildlife from foraging or lingering around the treated Day Use Areas.

Livestock

Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. Since the Day Use Areas will be fenced and not accessible to cattle and the areas treated around other unfenced infrastructure will be small, there should be very low to no risk to cattle.

Paleontological and Cultural Resources

Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. Risks of treatment of cultural use sites or human exposure to Diuron from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. Due to location within already developed and chronically disturbed sites, the treatments will have no significant visual effect on the vegetation or appearance of the landscape.

Recreation

Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. The once every 5-year application interval of the granular herbicide to recreation sites will not significantly disrupt recreation activity. Day Use Areas may be posted temporarily closed briefly (< 2 hours) during active herbicide application, for visitor safety.

Social and Economic Conditions

Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

Diuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. According to the 1991 13-State EIS, there are risks to workers and the general public associated with both routine and accidental exposures to Diuron. The majority of Diuron applied to Day Use Areas will be applied in waste areas between areas kept weed free by chronic disturbance from vehicle travel and the parking area fence line. Since the primary treatment area will generally be outside of the areas that will be encountered by the visiting public, exposure risk of Diuron is likely to be very low. Standard operating procedures will be followed for human safety including establishing buffer zones between treatment areas and residences and organic fields, using protective equipment as directed by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport, following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

Tebuthiuron

Air Quality

Tebuthiuron is not a volatile compound, therefore it has no direct effects on air quality. Localized, brief, minor to negligible impacts to air quality are possible due to activities that support the herbicide applications. These may include exhaust emissions from motorized vehicles and particulate emissions (dust) from vehicle travel on unpaved roads.

Soil Resources

Tebuthiuron is insoluble in water. It has moderate mobility in soil and only weakly binds to soil. Tebuthiuron has a half-life in soil of 360 days. Tebuthiuron has no direct effect on soil resources. Due to the long half-life and ability to completely control (remove) vegetative cover, there is potential for localized, minor, long-term soil erosion. Soil erosion would be mitigated by limiting the application of Tebuthiuron to relatively small areas which would have mineral covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion.

Water Resources and Quality

Tebuthiuron will not be applied to wetlands and riparian areas. Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent off-site transport in runoff to wetlands and riparian areas. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Tebuthiuron to relatively small areas, which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off-site transport.

Wetland and Riparian Areas

Tebuthiuron will not be applied to wetlands and riparian areas. Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent off-site transport in runoff to wetlands and riparian areas. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Tebuthiuron to relatively small areas, which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off-site transport.

Vegetation

Tebuthiuron will only be applied to terrestrial uplands. A sufficient buffer zone will be maintained between treatment areas (Day Use Areas and infrastructure) and native vegetation to prevent off-site transport in runoff to sensitive native vegetation. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Tebuthiuron to relatively small areas, which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off-site transport.

Fish and Other Aquatic Organisms

Tebuthiuron will not be applied to wetlands and riparian areas. Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A sufficient buffer zone will be maintained between the upland terrestrial treatment areas and wetlands and riparian zones to prevent off-site transport in runoff to wetlands and riparian areas. In addition to the distance buffer, the potential for off-site transport will be mitigated by limiting the application of Tebuthiuron to relatively small areas, which would have mineral aggregate covers (gravel parking lots) to protect from erosion. Additionally, areas of untreated grassland immediately adjacent to the treated areas would serve as a vegetated buffer strip to protect from any potential erosion and off-site transport.

Wildlife Resources

Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. There are low acute and chronic risks for ingestion scenarios for small mammals, small birds, and large mammalian carnivores. It is highly likely that the frequent disturbance associated with concentrated visitor activity around the Day Use Areas will dissuade wildlife from foraging or lingering around the treated Day Use Areas.

Livestock

Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. Since the Day Use Areas will be fenced and not accessible to cattle and the areas treated around other unfenced infrastructure will be small, there should be very low to no risk to cattle.

Paleontological and Cultural Resources

Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. Risks of treatment of cultural use sites or human exposure to Tebuthiuron from ingestion of Native American traditional use plants will be mitigated by project-level consultation with local Tribes prior to any herbicide application.

Visual Resources

Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. Due to location within already developed and chronically disturbed sites, the treatments will have no significant visual effect on the vegetation or appearance of the landscape.

Recreation

Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. The once every 5 year application interval of the granular herbicide to recreation sites will not significantly disrupt recreation activity. Day Use Areas may be posted temporarily closed briefly (< 2 hours) during active herbicide application, for visitor safety.

Social and Economic Conditions

Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. A wide diversity of the public is anticipated to visit C-CD for recreation with no disproportionate effects of herbicide treatments on any specific group of visitors.

Human Health and Safety

Tebuthiuron will only be applied to terrestrial uplands on Day Use Areas and around other infrastructure. According to the 1991 13-State EIS, there are risks to workers and the general public associated with both routine and accidental exposures to Tebuthiuron. The majority of Tebuthiuron applied to Day Use Areas will be applied in waste areas between areas kept weed free by chronic disturbance from vehicle travel and the parking area fence line. Since the primary treatment area will generally be outside of the areas that will be encountered by the visiting public, exposure risk of Tebuthiuron is likely to be very low. Standard operating procedures will be followed for human safety including establishing buffer zones between treatment areas and

residences and organic fields, using protective equipment as directed by the herbicide label, posting treated areas with signs, observing restricted entry intervals specified by the herbicide label, having a copy of the Safety Data Sheets at work sites, securing containers during transport, following herbicide labels during transport, following herbicide label directions for use and storage, and disposing of unwanted herbicides promptly and correctly.

HERBICIDE APPLICATION STANDARD OPERATING PROCEDURES

The Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic EIS (PEIS) identifies the following Standard Operating Procedures (SOP) in Chapter 2 and in Appendices B and C. **Additional SOPs have been added in bold text:**

General SOP:

- Conduct pre-treatment surveys for sensitive habitat and special status species within or adjacent to proposed treatment areas.
- Conduct a pretreatment survey before applying herbicides.
- Prepare spill contingency plan in advance of treatment.
- Select herbicide that is least damaging to the environment while providing the desired results.
- Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, inert ingredients, and tank mixtures.
- Apply the least amount of herbicide needed to achieve the desired result.
- Follow product label for use and storage.
- Have licensed applicators apply herbicides.
- Use only USEPA- approved herbicides and follow product label directions and “advisory” statements.
- Review, understand, and conform to the “Environmental Hazards” section on the herbicide label. This section warns of known pesticide risks to the environment and provides practical ways to avoid harm to organisms or to the environment.
- Minimize the size of application areas, when feasible.
- Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/landowners.
- Avoid accidental direct spray and spill conditions to minimize risks to resources.
- Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph or a serious rainfall event is imminent.
- Use drift control agents and low volatile formulations.
- Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation.
- Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species.
- Turn off applied treatments at the completion of spray runs and during turns to start another spray run.
- Post treated areas and specify reentry or rest times, if appropriate.
- Notify adjacent landowners prior to treatment.

- Keep copy of Material Safety Data Sheets (MSDSs) at work sites. MSDSs available for review at <http://www.cdms.net/>.
- Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location.
- Refer to the herbicide label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide.
- Clean vehicles to remove seeds.

Air Quality:

- Consider the effects of wind, humidity, temperature inversions, and heavy rainfall on herbicide effectiveness and risks.
- Apply herbicides in favorable weather conditions to minimize drift. For example, do not treat when winds exceed 10 mph or rainfall is imminent.
- Use drift reduction agents, as appropriate, to reduce the drift hazard.
- Take special precautions evaluating climate conditions (temperature, and wind) when applying the volatile herbicide dicamba, in order to prevent off-site drift.
- Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]).
- Select proper application methods (e.g., set maximum spray heights, use appropriate buffer distances between spray sites and non-target resources).

Soil Resources:

- Minimize treatments in areas where herbicide runoff is likely, such as steep slopes when heavy rainfall is expected.
- Minimize use of herbicides that have high soil mobility, particularly in areas where soil properties increase the potential for mobility.
- Do not apply granular herbicides on slopes of more than 15% where there is the possibility of runoff carrying the granules into non-target areas.

Water Resources:

- Consider climate, soil type, slope, and vegetation type when developing herbicide treatment programs.
- Select herbicide products to minimize impacts to water. This is especially important for application scenarios that involve risk from active ingredients in a particular herbicide, as predicted by risk assessments.
- Use local historical weather data to choose the month of treatment. Considering the phenology of the target species, schedule treatments based on the condition of the water body and existing water quality conditions.
- Plan to treat between weather fronts (calms) and at appropriate time of day to avoid high winds that increase water movements, and to avoid potential storm water runoff and water turbidity.
- Review hydrogeologic maps of proposed treatment areas. Note depths to groundwater and areas of shallow groundwater and areas of surface water and groundwater interaction.

- Minimize treating areas with high risk for groundwater contamination.
- Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body.
- Do not rinse spray tanks in or near water bodies. Do not broadcast pellets where there is danger of contaminating water supplies.
- Maintain buffers between treatment areas and water bodies. Buffer widths should be developed based on herbicide- and site-specific criteria to minimize impacts to water bodies.
- Minimize the potential effects to surface water quality and quantity by stabilizing terrestrial areas as quickly as possible following treatment.

Wetlands and Riparian Areas:

- Use a selective herbicide and a wick or backpack sprayer.
- Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths of 10 feet for hand spray applications and 25 feet for vehicle.

Vegetation:

- Refer to the herbicide label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide.
- Use native or sterile plant species for revegetation and restoration projects to compete with invasive species until desired vegetation establishes
- Use weed-free feed for horses and pack animals. Use weed-free straw and mulch for revegetation and other activities.
- Identify and implement any temporary domestic livestock grazing and/or supplemental feeding restrictions needed to enhance desirable vegetation recovery following treatment. Consider adjustments in the existing grazing permit, needed to maintain desirable vegetation on the treatment site.

Pollinators:

- Complete vegetation treatments seasonally before pollinator foraging plants bloom.
- Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily.
- Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment.
- Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources.
- Maintain herbicide free buffer zones around patches of important pollinator nectar and pollen sources.
- Maintain herbicide free buffer zones around patches of important pollinator nesting habitat and hibernacula.
- Make special note of pollinators that have single host plant species, and minimize herbicide spraying on those plants (if invasive species) and in their habitats.

Fish and Other Aquatic Organisms:

- Use appropriate buffer zones based on label and risk assessment guidance.
- Minimize treatments near fish-bearing water bodies during periods when fish are in life stages most sensitive to the herbicide(s) used, and use spot rather than broadcast treatments..
- Use appropriate application equipment/method near water bodies if the potential for off-site drift exists.
- For treatment of aquatic vegetation, 1) treat only that portion of the aquatic system necessary to achieve acceptable vegetation management; 2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms; and 3) follow water use restrictions presented on the herbicide label.

Wildlife:

- Use herbicides of low toxicity to wildlife, where feasible.
- Use spot applications or low-boom broadcast operations where possible to limit the probability of contaminating non-target food and water sources, especially non-target vegetation over areas larger than the treatment area.
- Use timing restrictions (e.g., do not treat during critical wildlife breeding or staging periods) to minimize impacts to wildlife.

Special Status Species:

- Survey for special status species before treating an area.
- Use a selective herbicide and spray methods to minimize risks to special status plants.
- Avoid treating vegetation during time-sensitive periods (e.g., nesting and migration, sensitive life stages) for special status species in area to be treated.

Livestock:

- Whenever possible and whenever needed, schedule treatments when livestock are not present in the treatment area. Design treatments to take advantage of normal livestock grazing rest periods, when possible.
- As directed by the herbicide label, remove livestock from treatment sites prior to herbicide application, where applicable.
- Use herbicides of low toxicity to livestock, where feasible.
- Take into account the different types of application equipment and methods, where possible, to reduce the probability of contamination of non-target food and water sources.
- Notify permittees of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment.
- Notify permittees of livestock grazing, feeding, or slaughter restrictions, if necessary.
- Provide alternative forage sites for livestock, if possible.

Cultural Resources:

- Follow standard procedures for compliance with Section 106 of the National Historic Preservation Act as implemented through the Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act and state protocols or 36 Code of Federal Regulations Part 800, including necessary consultations with State Historic Preservation Officers and interested tribes.
- Follow BLM Handbook H-8270-1 (General Procedural Guidance for Paleontological Resource Management) to determine known Condition I and Condition 2 paleontological areas, or collect information through inventory to establish Condition 1 and Condition 2 areas, determine resource types at risk from the proposed treatment, and develop appropriate measures to minimize or mitigate adverse impacts.
- Consult with tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments. Work with tribes to minimize impacts to these resources.
- Follow guidance under Human Health and Safety in the PEIS in areas that may be visited by Native peoples after treatments.

Visual Resources:

- Minimize the use of broadcast foliar applications in sensitive watersheds to avoid creating large areas of browned vegetation.
- Minimize off-site drift and mobility of herbicides (e.g., do not treat when winds exceed 10 mph; minimize treatment in areas where herbicide runoff is likely; establish appropriate buffer widths between treatment areas and residences) to contain visual changes to the intended treatment area.
- If the area is a Class I or II visual resource, ensure that the change to the characteristic landscape is low and does not attract attention (Class I), or if seen, does not attract the attention of the casual viewer (Class II).
- Lessen visual impacts by: 1) designing projects to blend in with topographic forms; 2) leaving some low-growing trees or planting some low-growing tree seedlings adjacent to the treatment area to screen short-term effects; and 3) revegetating the site following treatment.
- When restoring treated areas, design activities to repeat the form, line, color, and texture of the natural landscape character conditions to meet established Visual Resource Management (VRM) objectives.

Recreation:

- Schedule treatments to avoid peak recreational use times, while taking into account the optimum management period for the targeted species.
- Notify the public of treatment methods, hazards, times, and nearby alternative recreation areas.
- Adhere to entry restrictions identified on the herbicide product label for public and worker access.

- Post signs noting exclusion areas and the duration of exclusion, if necessary.
- Use herbicides during periods of low human use, where feasible.

Social & Economic:

- Post treated areas and specify reentry or rest times, if appropriate.
- Notify grazing permittees of livestock feeding restrictions in treated areas, if necessary, as per label instructions.
- Notify the public of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment.
- Control public access until potential treatment hazards no longer exist, per label instructions.
- Observe restricted entry intervals specified by the herbicide label.
- Notify local emergency personnel of proposed treatments.
- Use spot applications or low-boom broadcast applications where possible to limit the probability of contaminating non-target food and water sources, especially vegetation over areas larger than the treatment area.
- Consult with Native American tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments. **Herbicide applications will be limited in RMZ #4, an area identified as high cultural significance.**
- To the degree possible within the law, hire local contractors and workers to assist with herbicide application projects and purchase materials and supplies, including chemicals, for herbicide treatment projects through local suppliers.
- To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an Integrated Pest Management program for projects proposing local use of herbicides.

Rights-of-Way:

- Coordinate vegetation management activities where joint or multiple use of a ROW exists.
- Notify other public land users within or adjacent to the ROW proposed for treatment.
- Use only herbicides that are approved for use in ROW areas.

Human Health and Safety:

- Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of 100 feet for broadcast treatment applications, unless a written waiver is granted.
- **Establish a buffer between treatment areas and private, organic farms based on guidance, per 7 CFR 205.202, with a minimum buffer of 50 feet for broadcast treatment applications.**
- Use protective equipment as directed by the herbicide product label.
- Post treated areas with appropriate signs at common public access areas.
- Observe restricted entry intervals specified by the herbicide product label.
- Provide public notification in newspapers or other media where the potential exists for public exposure.

- Have a copy of MSDSs at work site.
- Notify local emergency personnel of proposed treatments.
- Contain and clean up spills and request help as needed.
- Secure containers during transport.
- Follow label directions for use and storage.
- Dispose of unwanted herbicides promptly and correctly.

MITIGATION MEASURES

The 2007 PEIS also identifies the following relevant mitigation measures specific to individual resources in Chapter 2. **The relevant herbicides have text in bold:**

Water Resources and Quality & Wetland and Riparian Areas:

- Establish appropriate (herbicide specific) buffer zones to downstream water bodies, habitats, and species/populations of interest.

Vegetation:

- Minimize the use of terrestrial herbicides (especially bromacil, **diuron**, and sulfometuron methyl) in watersheds with downgradient ponds and streams if potential impacts to aquatic plants are of concern.
- Establish appropriate (herbicide specific) buffer zones around downstream water bodies, habitats, and species/populations of interest. Consult the ERAs for more specific information on appropriate buffer distances under different soil, moisture, vegetation, and application scenarios.
- To protect special status plant species, implement all conservation measures for plants presented in the Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment.

Fish and Other Aquatic Organisms:

- Limit the use of terrestrial herbicides in watersheds with characteristics suitable for potential surface runoff, that have fish-bearing streams, during periods when fish are in life stages most sensitive to the herbicide(s) used.
- To protect special status fish and other aquatic organisms, implement all conservation measures for aquatic animals presented in the Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment.
- Establish appropriate herbicide-specific buffer zones for water bodies, habitats, or fish or other aquatic species of interest.
- Avoid using the adjuvant R-11 in aquatic environments, and either avoid using **glyphosate** formulations containing POEA, or seek to use formulations with the least amount of POEA, to reduce risks to aquatic organisms.

Wildlife:

- To minimize risks to terrestrial wildlife, do not exceed the typical application rate for applications of dicamba, **diuron**, **glyphosate**, hexazinone, **tebuthiuron**, or **triclopyr**, where feasible.
- Minimize the size of application areas, where practical, when applying **2,4-D**, bromacil, **diuron**, and Overdrive to limit impacts to wildlife, particularly through contamination of food items.
- Where practical, limit **glyphosate** and hexazinone to spot applications in rangeland and wildlife habitat areas to avoid contamination of wildlife food items.
- Avoid using the adjuvant R-11 in aquatic environments, and either avoid using **glyphosate** formulations containing POEA, or seek to use formulations with the least amount of POEA, to reduce risks to amphibians.
- Do not apply bromacil or **diuron** in rangelands and use appropriate buffer zones to limit contamination of off-site vegetation, which may serve as forage for wildlife.
- To protect special status wildlife species, implement all conservation measures for terrestrial animals presented in the Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Biological Assessment. Apply these measures to special status species (refer to conservation measures for a similar size and type of species, of the same trophic guild).

Livestock:

- Minimize potential risks to livestock by applying **diuron**, **glyphosate**, hexazinone, **tebuthiuron**, and **triclopyr** at the typical application rate, where feasible.
- Do not apply **2,4-D**, bromacil, dicamba, **diuron**, Overdrive, picloram, or **triclopyr** across large application areas, where feasible, to limit impacts to livestock, particularly through the contamination of food items.
- Where feasible, limit **glyphosate** and hexazinone to spot applications in rangeland.
- Do not apply bromacil or **diuron** in rangelands and use appropriate buffer zones.

Paleontological and Cultural Resources:

- Do not exceed the typical application rate when applying **2,4-D**, bromacil, diquat, **diuron**, fluridone, hexazinone, **tebuthiuron**, and **triclopyr** in known traditional use areas.
- Avoid applying bromacil or **tebuthiuron** aerially in known traditional use areas.

Human Health and Safety:

- Use the typical application rate, where feasible, when applying **2,4-D**, 2,4-DP, atrazine, bromacil, diquat, **diuron**, fluridone, fosamine, hexazinone, **tebuthiuron**, and **triclopyr** to reduce risk to occupational and public receptors.
- Avoid applying atrazine, bromacil, **diuron**, or simazine aerially.
- Evaluate **diuron** applications on a site-by-site basis to avoid risks to humans. There appear to be few scenarios where **diuron** can be applied without risk to occupational receptors.

REFERENCES

- Bureau of Land Management (BLM). 2007a. Resource Management Plan for the Southern Diablo Mountain Range & Central Coast of California. Record of Decision. Bureau of Land Management. Hollister Field Office. California.
- Bureau of Land Management (BLM). 2007b. Vegetation Treatment Using Herbicides on BLM Lands in Seventeen Western States Programmatic EIS.
- Bureau of Land Management (BLM). 2016. The Record of Decision on Vegetation Treatments Using Aminopyralid, Floroxypyr and Rimsulfuron.
- California Department of Pesticide Regulation. 2020. California Restricted Materials Requirements. Available: <https://www.cdpr.ca.gov/docs/enforce/dpr-enf-013a.pdf>
- DiTomaso J.M. et al. 2013. Weed Control in Natural Areas in the Western United States. University of California, Davis. Department of Plant Sciences, University of California, Davis. Weed Research and Information Center. 544 pp.
- Hayes G.F. and K.D. Holl. 2003. Cattle grazing impacts on annual forbs and vegetation composition of mesic grasslands in California. *Conservation Biology* 17:1694-1702.
- Huaraca, L.F., Chamorro, S.A., Hernández, V., Bay-Schmith, E. and Villamar, C.A., 2020. Comparative acute toxicity of glyphosate-based herbicide (GBH) to *Daphnia magna*, *Tisbe longicornis*, and *Emerita analoga*. *Journal of Environmental Science and Health, Part B*, pp.1-9.
- Krynak, K.L., Burke, D.J. and Benard, M.F., 2017. Rodeo™ herbicide negatively affects Blanchard's Cricket Frogs (*Acris blanchardi*) survival and alters the skin-associated bacterial community. *Journal of Herpetology*, 51(3), pp.402-410.
- McCoy KA and Peralta AL (2018) Pesticides Could Alter Amphibian Skin Microbiomes and the Effects of *Batrachochytrium dendrobatidis*. *Front. Microbiol.* 9:748. doi: 10.3389/fmicb.2018.00748
- Motta, E.V., Raymann, K. and Moran, N.A., 2018. Glyphosate perturbs the gut microbiota of honey bees. *Proceedings of the National Academy of Sciences*, 115(41), pp.10305-10310.
- Sotoyome RCD. 2019. Grazing Handbook. A Guide for Resource Managers in Coastal California. <https://www.carangeland.org/images/GrazingHandbook.pdf> [Accessed Dec. 3, 2019]
- Sponsler, D.B., Grozinger, C.M., Hitaj, C., Rundlöf, M., Botías, C., Code, A., Lonsdorf, E.V., Melathopoulos, A.P., Smith, D.J., Suryanarayanan, S. and Thogmartin, W.E., 2019. Pesticides and pollinators: A socioecological synthesis. *Science of the Total Environment*, 662, pp.1012-1027.
- Stromberg M., Corbin J., and C. D'Antonio. 2007. California Grasslands. University of California Press. 408 pp.
- Trust for Public Land (TPL). 2004. Coast Dairies Long-Term Resource Protection and Access Plan. Environmental Science Associates. 360 pp.

**U.S. Department of Interior
BLM Pesticide Use Proposal**

Proposal Number:
EA Number: DOI-BLM-CA-C090-2020-0015-RMP-EA

State: CA District: CenCal Field Office: Central Coast
County: Santa Cruz Date: [subject to Decision Record]

Location of Application(s) (including township, range, section, portion of section, and estimated acreage for each location. You may attach a separate page and reference it here):

Cotoni-Coast Dairies unit of the California Coastal National Monument.

Duration of Proposal: (3 years).

I. Pesticide Application (including mixtures, surfactants, and colorants):

For Herbicide Common Name, Trade Name, Manufacturer, EPA Registration Number, and California Registration Number, see **Table 1**.

For Herbicide Formulation, Target Vegetation Type, Application Method, and Stock Solution Concentration, see **Table 2**.

For Adjuvants Common Name, Trade Name, Manufacturer, EPA Registration Number, and California Registration Number, see **Table 3**.

Table 1. Proposed herbicides for use at Cotoni-Coast Dairies, including Common Name, Manufacturer Trade Name, Manufacturer Name, EPA Registration Number, and California Registration Number. **Blue** = aquatic formulation (labeled for application in and around surface water). **Brown** = terrestrial formulation (not labeled for aquatic application).

Common Name	Manufacturer Trade Name	Manufacturer Name	EPA Reg. Number	CA Reg. Number
Glyphosate	Aqua Neat	Nufarm Americas Inc.	228-365	228-365-ZA
Glyphosate	Aqua Star	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-59	42750-59-ZA
Glyphosate	Imitator Aquatic	Drexel Chemical Company	19713-623	19713-623-AA
Glyphosate	Rodeo	Dow AgroSciences	62719-324	62719-324-ZB
Triclopyr	Alligare Triclopyr 3	Alligare, LLC	81927-13	81927-13-AA
Triclopyr	Element 3A	Dow AgroSciences	62719-37	62719-37-ZE
Triclopyr	Garlon 3A	Dow AgroSciences	62719-37	62719-37-ZC
Triclopyr	Tahoe 3A	Nufarm Americas Inc.	228-520	228-520-AA
Triclopyr	Vastlan	Dow AgroSciences	62719-687	62719-687-AA
Aminopyralid	Milestone	Dow AgroSciences	62719-519	62719-519-AA
Aminopyralid + 2,4-D	ForeFront HL	Dow AgroSciences	62719-630	62719-630-AA
Aminopyralid + 2,4-D	GrazonNext HL	Dow AgroSciences	62719-628	62719-628-AA
Clopyralid	Alligare Clopyralid 3	Alligare, LLC	81927-14	81927-14-AA
Clopyralid	Spur	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-89	42750-89-AA
Clopyralid	Stinger	Dow AgroSciences	62719-73	62719-73-AA
Clopyralid	Transline	Dow AgroSciences	62719-259	62719-259-AA
2,4-D	2,4-D 4# Amine Weed Killer	UAP-Platte Chem. Co.	34704-120	34704-120-AA
2,4-D	2,4-D Amine 4	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-19	42750-19-AA
2,4-D	Alligre 2,4-D Amine	Alligare, LLC	81927-38	81927-38-AA
2,4-D	Clean Amine	Loveland Products Inc.	34704-120	34704-120-ZA
2,4-D	Formula 40	Nufarm Americas Inc.	228-357	228-357-ZA
2,4-D	HardBall	Helena Agri-Enterprises, LLC	5905-549	5905-549-AA
2,4-D	Saber	Loveland Products Inc.	34704-803	34704-803-ZB
2,4-D	Shredder Amine 4	WinField-United	1381-103	1381-103-AA
2,4-D	Unison	Helena Agri-Enterprises, LLC	5905-542	5905-542-AA
2,4-D	WEEDestroy AM-40	Nufarm Americas Inc.	228-145	228-145-ZA
Dicamba	Alligare Dicamba 4 Herbicide	Alligare, LLC	81927-55	81927-55-AA
Dicamba	Banvel	Arysta LifeScience N.A. Corp.	66330-276	66330-276-AA
Dicamba	Clarity	BASF Corporation	7969-137	7969-137-AA
Dicamba	Diablo	Nufarm Americas Inc.	228-379	228-379-ZA
Dicamba	Dicamba DMA	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-40	42750-40-AA
Dicamba	Rifle	Loveland Products Inc.	34704-861	34704-861-AA
Dicamba	Vanquish Herbicide	Nufarm Americas Inc.	228-397	228-397-AA
Dicamba + 2,4-D	Rifle-D	Loveland Products Inc.	34704-869	34704-869-AA
Dicamba + 2,4-D	Weedmaster	Nufarm Americas Inc.	71368-34	71368-34-AA

Table 1, continued. Proposed herbicides for use at Cotoni-Coast Dairies, including Common Name, Manufacturer Trade Name, Manufacturer Name, EPA Registration Number, and California Registration Number. **Blue** = aquatic formulation (labeled for application in and around surface water). **Brown** = terrestrial formulation (not labeled for aquatic application).

Common Name	Manufacturer Trade Name	Manufacturer Name	EPA Reg. Number	CA Reg. Number
Glyphosate	Accord XRT II	Dow AgroSciences	62719-556	62719-556-AA
Glyphosate	Alligare Glyphosate 4 PLUS	Alligare, LLC	81927-9	81927-9-AA
Glyphosate	Alligare Glyphosate 5.4	Alligare, LLC	81927-8	81927-8-AA
Glyphosate	Buccaneer	Tenkoz	55467-10	55467-10-AA
Glyphosate	Buccaneer Plus	Tenkoz	55467-9	55467-9-AA
Glyphosate	Credit Xtreme	Nufarm Americas Inc.	71368-81	71368-81-AA
Glyphosate	Gly Star Gold	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61	42750-61-ZC
Glyphosate	Gly Star Original	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-60	42750-60-AA
Glyphosate	Gly Star Plus	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61	42750-61-AA
Glyphosate	Gly Star Pro	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61	42750-61-ZA
Glyphosate	GlyphoMate 41	PBI/Gordon Corporation	2217-847	2217-847-AA
Glyphosate	Glypro	Dow AgroSciences	62719-324	62719-324-AA
Glyphosate	Glypro Plus	Dow AgroSciences	62719-322	62719-322-AA
Glyphosate	Honcho Plus	Monsanto	524-454	524-454-ZB
Glyphosate	Imitator DA	Drexel Chemical Company	19713-586	19713-586-AA
Glyphosate	Imitator Plus	Drexel Chemical Company	19713-526	19713-526-AA
Glyphosate	KleenUp Pro	Loveland Products, Inc.	34704-890	34704-890-ZB
Glyphosate	Mad Dog Plus	Loveland Products, Inc.	34704-890	34704-890-ZC
Glyphosate	Makaze	Loveland Products, Inc.	34704-890	34704-890-ZA
Glyphosate	Razor Pro	Nufarm Americas Inc.	228-366	228-366-ZD
Glyphosate	Roundup PRO	Monsanto	524-475	524-475-ZA
Glyphosate	Roundup PRO Concentrate	Monsanto	524-529	524-529-AA
Glyphosate	Roundup PROMAX	Monsanto	524-579	524-579-AA
Diuron	Alligare Diuron 4L	Alligare, LLC	81927-44	81927-44-AA
Diuron	Alligare Diuron 80DF	Alligare, LLC	81927-12	81927-12-AA
Diuron	Direx 4L	Makhteshim Agan of N. A. (ADAMA)	66222-54	66222-54-ZC
Diuron	Diuron 4L	Drexel Chemical Company	19713-36	19713-36-AA
Diuron	Diuron 4L	Loveland Products Inc.	34704-854	34704-854-AA
Diuron	Diuron 80	Drexel Chemical Company	19713-274	19713-274-AA
Diuron	Diuron 80 WDG	Loveland Products Inc.	34704-648	34704-648-AA
Tebuthiuron	Alligare Tebuthiuron 20 P	Alligare, LLC	81927-41	81927-41-AA
Tebuthiuron	Alligare Tebuthiuron 80 WG	Alligare, LLC	81927-37	81927-37-AA
Tebuthiuron	Spike 20P	Dow AgroSciences	62719-121	62719-121-AA
Tebuthiuron	Spike 80DF	Dow AgroSciences	62719-107	62719-107-ZA
Tebuthiuron	SpraKil S-5 Granules	SSI Maxim Co., Inc.	34913-10	34913-10-AA
Tebuthiuron + Diuron	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15	34913-15-AA
Tebuthiuron + Diuron	SpraKil SK-26 Granular	SSI Maxim Co., Inc.	34913-16	34913-16-AA

Table 2. Proposed herbicides for use at Cotoni-Coast Dairies, including Common Name, Manufacturer Trade Name, Formulation, Target Vegetation Type, Application Method, and Stock Solution Concentration. **Blue** = aquatic formulation (labeled for application in and around surface water). **Brown** = terrestrial formulation (not labeled for aquatic application).

							Non-native target veg type			Application method						
		Formulation								Ground						
		Formulation - Terrestrial	Formulation - Aquatic	Dry, granular	Dry, flowable	Liquid, flowable	Grassland - All veg - Day Use Areas	Grassland - Non-nat. thistles	Grassland - Non-nat. broadleaf ann.	Riparian - Non-nat. perennial vines	Scrub - Non-native woody shrubs	Granular spreader - broadcast	Backpack sprayer - spot spray	Motorized vehicle - broadcast spray	Stock solution	
Common Name	Manufacturer Trade Name														Concentration	Units of Conc.
Glyphosate	Aqua Neat		X			X				X			X		4	Lbs. A.E. per gal.
Glyphosate	Aqua Star		X			X				X			X		4	Lbs. A.E. per gal.
Glyphosate	Imitator Aquatic		X			X				X			X		4	Lbs. A.E. per gal.
Glyphosate	Rodeo		X			X				X			X		4	Lbs. A.E. per gal.
Triclopyr	Alligare Triclopyr 3		X			X				X			X		3	Lbs. A.E. per gal.
Triclopyr	Element 3A		X			X				X			X		3	Lbs. A.E. per gal.
Triclopyr	Garlon 3A		X			X				X			X		3	Lbs. A.E. per gal.
Triclopyr	Tahoe 3A		X			X				X			X		3	Lbs. A.E. per gal.
Triclopyr	Vastlan		X			X				X			X		4	Lbs. A.E. per gal.
Aminopyralid	Milestone	X				X	X						X	X	2	Lbs. A.E. per gal.
Aminopyralid + 2,4-D	ForeFront HL	X				X	X	X					X	X	0.41 + 3.33	Lbs. A.E. per gal.
Aminopyralid + 2,4-D	GrazonNext HL	X				X	X	X					X	X	0.41 + 3.33	Lbs. A.E. per gal.
Clopyralid	Alligare Clopyralid 3	X				X	X						X	X	3	Lbs. A.E. per gal.
Clopyralid	Spur	X				X	X						X	X	3	Lbs. A.E. per gal.
Clopyralid	Stinger	X				X	X	X					X	X	3	Lbs. A.E. per gal.
Clopyralid	Transline	X				X	X						X	X	3	Lbs. A.E. per gal.
2,4-D	2,4-D 4# Amine Weed Killer	X				X		X					X	X	3.74	Lbs. A.E. per gal.
2,4-D	2,4-D Amine 4	X				X		X					X	X	3.8	Lbs. A.E. per gal.
2,4-D	Alligre 2,4-D Amine	X				X		X					X	X	3.8	Lbs. A.E. per gal.
2,4-D	Clean Amine	X				X		X					X	X	3.74	Lbs. A.E. per gal.
2,4-D	Formula 40	X				X		X					X	X	3.67	Lbs. A.E. per gal.
2,4-D	HardBall	X				X		X					X	X	1.74	Lbs. A.E. per gal.
2,4-D	Saber	X				X		X					X	X	3.8	Lbs. A.E. per gal.
2,4-D	Shredder Amine 4	X				X		X					X	X	3.8	Lbs. A.E. per gal.
2,4-D	Unison	X				X		X					X	X	1.74	Lbs. A.E. per gal.
2,4-D	WEEDestroy AM-40	X				X		X					X	X	3.8	Lbs. A.E. per gal.
Dicamba	Alligare Dicamba 4 Herbicide	X				X		X					X	X	5	Lbs. A.E. per gal.
Dicamba	Banvel	X				X		X					X	X	4	Lbs. A.E. per gal.
Dicamba	Clarity	X				X		X					X	X	4	Lbs. A.E. per gal.
Dicamba	Diablo	X				X		X					X	X	4	Lbs. A.E. per gal.
Dicamba	Dicamba DMA	X				X		X					X	X	4	Lbs. A.E. per gal.
Dicamba	Rifle	X				X		X					X	X	4	Lbs. A.E. per gal.
Dicamba	Vanquish Herbicide	X				X		X					X	X	4	Lbs. A.E. per gal.
Dicamba + 2,4-D	Rifle-D	X				X		X					X	X	1.0 + 2.88	Lbs. A.E. per gal.
Dicamba + 2,4-D	Weedmaster	X				X		X					X	X	1.0 + 2.87	Lbs. A.E. per gal.

Table 2, continued. Proposed herbicides for use at Cotoni-Coast Dairies, including Common Name, Manufacturer Trade Name, Formulation, Target Vegetation Type, Application Method, and Stock Solution Concentration. **Blue** = aquatic formulation (labeled for application in and around surface water). **Brown** = terrestrial formulation (not labeled for aquatic application).

											Application method					
		Formulation				Non-native target veg type					Ground					
		Formulation - Terrestrial	Formulation - Aquatic	Dry, granular	Dry, flowable	Liquid, flowable	Grassland - All veg - Day Use Areas	Grassland - Non-nat. thistles	Grassland - Non-nat. broadleaf ann.	Riparian - Non-nat. perennial vines	Scrub - Non-native woody shrubs	Granular spreader - broadcast	Backpack sprayer - spot spray	Motorized vehicle - broadcast spray	Stock solution	
Common Name	Manufacturer Trade Name														Concentration	Units of Conc.
Glyphosate	Accord XRT II	X				X	X	X	X		X		X	X	4	Lbs. A.E. per gal.
Glyphosate	Alligare Glyphosate 4 PLUS	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Alligare Glyphosate 5.4	X				X	X	X	X		X		X	X	4	Lbs. A.E. per gal.
Glyphosate	Buccaneer	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Buccaneer Plus	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Credit Xtreme	X				X	X	X	X		X		X	X	4.5	Lbs. A.E. per gal.
Glyphosate	Gly Star Gold	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Gly Star Original	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Gly Star Plus	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Gly Star Pro	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	GlyphoMate 41	X				X	X	X	X		X		X	X	2.8	Lbs. A.E. per gal.
Glyphosate	Glypro	X				X	X	X	X		X		X	X	4	Lbs. A.E. per gal.
Glyphosate	Glypro Plus	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Honcho Plus	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Imitator DA	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Imitator Plus	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	KleenUp Pro	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Mad Dog Plus	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Makaze	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Razor Pro	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Roundup PRO	X				X	X	X	X		X		X	X	3	Lbs. A.E. per gal.
Glyphosate	Roundup PRO Concentrate	X				X	X	X	X		X		X	X	3.7	Lbs. A.E. per gal.
Glyphosate	Roundup PROMAX	X				X	X	X	X		X		X	X	4.5	Lbs. A.E. per gal.
Diuron	Alligare Diuron 4L	X				X	X						X	X	4	Lbs. A.I. per gal.
Diuron	Alligare Diuron 80DF	X			X	X							X	X	80	% A.I.
Diuron	Direx 4L	X				X	X						X	X	4	Lbs. A.I. per gal.
Diuron	Diuron 4L	X				X	X						X	X	4	Lbs. A.I. per gal.
Diuron	Diuron 4L	X				X	X						X	X	4	Lbs. A.I. per gal.
Diuron	Diuron 80	X			X	X							X	X	80	% A.I.
Diuron	Diuron 80 WDG	X			X	X							X	X	80	% A.I.
Tebuthiuron	Alligare Tebuthiuron 20 P	X		X		X							X	X	20	% A.I.
Tebuthiuron	Alligare Tebuthiuron 80 WG	X			X	X							X	X	80	% A.I.
Tebuthiuron	Spike 20P	X		X		X						X			20	% A.I.
Tebuthiuron	Spike 80DF	X			X	X							X	X	80	% A.I.
Tebuthiuron	SpraKil S-5 Granules	X		X		X						X			5	% A.I.
Tebuthiuron + Diuron	SpraKil SK-13 Granular	X		X		X						X			1 + 3	% A.I.
Tebuthiuron + Diuron	SpraKil SK-26 Granular	X		X		X						X			2 + 6	% A.I.

Table 3. Proposed adjuvants for use at Cotoni-Coast Dairies, including Common Name, Trade Name, Manufacturer, EPA Registration Number, and California Registration Number.

Adjuvant Type	Manufacturer Trade Name	Manufacturer	EPA Reg Number	CA Reg. Number
Colorant/Dye	Alligare Super Marking Dye	Alligare, LLC	Not applicable	Not applicable
Colorant/Dye	BullsEye	Milliken Chemical	Not applicable	Not applicable
Colorant/Dye	Elite Ruby	Red River Specialties, Inc.	Not applicable	Not applicable
Colorant/Dye	Elite Sapphire	Red River Specialties, Inc.	Not applicable	Not applicable
Colorant/Dye	Elite Sapphire WSB	Red River Specialties, Inc.	Not applicable	Not applicable
Colorant/Dye	Elite Splendor	Red River Specialties, Inc.	Not applicable	Not applicable
Colorant/Dye	Hash Mark Blue Liquid	Exacto, Inc.	Not applicable	Not applicable
Colorant/Dye	Hash Mark Blue Liquid HC	Exacto, Inc.	Not applicable	Not applicable
Colorant/Dye	Hash Mark Blue Powder	Exacto, Inc.	Not applicable	Not applicable
Colorant/Dye	Hash Mark Green Liquid	Exacto, Inc.	Not applicable	Not applicable
Colorant/Dye	Hash Mark Green Powder	Exacto, Inc.	Not applicable	Not applicable
Colorant/Dye	Hi-Light	Becker-Underwood	Not applicable	Not applicable
Colorant/Dye	Hi-Light WSP	Becker-Underwood	Not applicable	Not applicable
Colorant/Dye	Marker Dye	Loveland Products, Inc.	Not applicable	Not applicable
Colorant/Dye	Mark-It Blue	Monterey AgResources	Not applicable	Not applicable
Colorant/Dye	Mark-It Red	Monterey AgResources	Not applicable	Not applicable
Colorant/Dye	Mystic HC	WinField United	Not applicable	Not applicable
Colorant/Dye	Signal	Precision Laboratories, LLC	Not applicable	Not applicable
Colorant/Dye	SPI-Max Blue Spray Marker	PROKoZ	Not applicable	Not applicable
Colorant/Dye	Spray Indicator XL	Helena Agri-Enterprises, LLC	Not applicable	Not applicable
Colorant/Dye	TurfTrax	Loveland Products, Inc.	Not applicable	Not applicable
Colorant/Dye	TurfTrax Blue Spray Indicator	Loveland Products, Inc.	Not applicable	Not applicable
Defoaming Agent	Alligare Anti-Foamer	Alligare, LLC	Not applicable	Not applicable
Defoaming Agent	Alligare Defoamer	Alligare, LLC	Not applicable	Not applicable
Defoaming Agent	Cornbelt Defoamer	Van Diest Supply Co.	Not applicable	Not applicable
Defoaming Agent	Defoamer	Brewer International	Not applicable	Not applicable
Defoaming Agent	Fighter-F 10	Loveland Products, Inc.	Not applicable	Not applicable
Defoaming Agent	Fighter-F Dry	Loveland Products, Inc.	Not applicable	Not applicable
Defoaming Agent	Foam Buster	Helena Agri-Enterprises, LLC	Not applicable	Not applicable
Defoaming Agent	Foambuster Max	Helena Agri-Enterprises, LLC	Not applicable	Not applicable
Defoaming Agent	Foam Fighter	Miller Chem. & Fert. Corp.	Not applicable	Not applicable
Defoaming Agent	Fome-Kil	Drexel Chemical Company	Not applicable	Not applicable
Defoaming Agent	FTF Defoamer	Wilbur-Ellis Co. LLC	Not applicable	Not applicable
Defoaming Agent	Gundown Max	Precision Laboratories, LLC	Not applicable	Not applicable
Defoaming Agent	No Foam	Wilbur-Ellis Co. LLC	Not applicable	Not applicable
Defoaming Agent	Red River Defoamer	Red River Specialties, Inc.	Not applicable	Not applicable
Defoaming Agent	Reverse	Exacto, Inc.	Not applicable	Not applicable
Defoaming Agent	Suppression	Chemorse Ltd.	Not applicable	Not applicable
Defoaming Agent	Tripleline	Creative Marketing & Research, Inc.	Not applicable	Not applicable
Defoaming Agent	Unfoamer	Loveland Products, Inc.	Not applicable	Not applicable
Tank Cleaner	All Clear	Loveland Products, Inc.	Not applicable	Not applicable
Tank Cleaner	Back Field	Exacto, Inc.	Not applicable	Not applicable
Tank Cleaner	Cornbelt Tank-Aid	Van Diest Supply Co.	Not applicable	Not applicable
Tank Cleaner	Elite Vigor	Red River Specialties, Inc.	Not applicable	Not applicable
Tank Cleaner	Kutter	Wilbur-Ellis Co. LLC	Not applicable	Not applicable
Tank Cleaner	Neutral-Clean	Wilbur-Ellis Co. LLC	Not applicable	Not applicable
Tank Cleaner	Pro Tank	WinField United	Not applicable	Not applicable
Tank Cleaner	Red River Tank Cleaner	Red River Specialties, Inc.	Not applicable	Not applicable
Tank Cleaner	SSC-11	Wilbur-Ellis Co. LLC	Not applicable	Not applicable
Tank Cleaner	Tank and Equipment Cleaner	Loveland Products, Inc.	Not applicable	Not applicable
Tank Cleaner	Wipe Out	Helena Agri-Enterprises, LLC	Not applicable	Not applicable

Method of Application:

The method of application is indicated for each herbicide type in **Table 2**. Additionally, the Integrated Pest Management strategy is summarized below in **METHODS of WEEDS CONTROL**, also found in the **Cotoni-Coast Dairies Weed Management Plan**.

A detailed analysis of effects for application of these herbicides at Cotoni-Coast Dairies is found in the **Cotoni-Coast Dairies Weed Management Plan**. The analysis is tiered to the following documents –

- 2007 Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Final Programmatic Environmental Impact Statement
- 2016 Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement

METHODS of WEEDS CONTROL

Non-native, tall, broadleaf annuals in grasslands

Due to their annual life cycle, herbaceous growth form, and widespread distribution in grasslands, the control of non-native broadleaf annuals is best accomplished by livestock grazing and mowing. Cattle are present within most of the grassland area grazing allotments of C-CD. The balance in dominance between the less competitive annual grasses and more competitive non-native, tall, broadleaf annuals in grasslands of C-CD, is largely influenced by the intensity of cattle grazing. Intensive grazing favors annual grass cover and native forbs, while the lack of grazing promotes dominance of non-native, tall, broadleaf annuals (Hayes and Holl 2003; Stromberg et al. 2007; Sotoyome RCD 2019). Management of cattle grazing will be the primary method of control for non-native, tall, broadleaf annuals in grasslands of C-CD. Some areas of grassland within allotments at C-CD are undergrazed by cattle due to poor access across steep terrain or lack of water availability in the uplands. Range improvements are proposed including placing water troughs in upland areas and updating fencing to encourage more even grazing across the grasslands of C-CD.

Within and around fenced Day Use Areas and around other infrastructure in grasslands, annual mowing will be used as the primary method to reduce fine fuel loads and wildfire risk. Mowing will also be used to reduce tall weeds along trails, roads, and fire breaks. Mowing equipment may include a mower attachment to a tractor, riding mower, walk-behind mower, or weed eaters. The total estimated annual area of non-native, tall, broadleaf annuals and non-native grasslands subject to mowing is 50 acres.

In some cases, herbicide will be used in place of grazing and mowing to treat weeds within and around Day Use Areas, other infrastructure, trails, roads, and fire breaks. The non-selective, post-emergent herbicide Glyphosate (liquid) will be broadcast applied with small-scale, ground-based application methods including a backpack sprayer (spot

spraying) and spray boom on a motorized vehicle (UTV or Truck; broadcast spraying). The use of Glyphosate will be primarily limited to situations where vegetation presents a wildfire risk, but the risk of wildfire caused by a blade mower would be even higher. The non-selective, pre-emergent herbicides Diuron and Tebuthiuron (solid, granular) will be locally applied by hand operated spreaders to small areas of the soil where complete removal of any herbaceous annual plant growth and bare ground is desired for several years. The application of Diuron and Tebuthiuron will be entirely limited to around Day Use Areas and infrastructure. No Diuron or Tebuthiuron treatments will be conducted in grasslands accessible to livestock.

In areas where non-native, tall broadleaf annuals are persistent in large areas of grasslands despite efforts to control them with livestock grazing and mowing, broadcast applications of selective herbicides will be conducted. The selective herbicides only control broadleaf annual plant species and do not affect grasses. These herbicide applications will be primarily undertaken in conjunction with efforts to restore non-native grassland to native grassland.

The selective, post-emergent, herbicides Dicamba and 2,4-D (liquid) will be applied to specifically control only broadleaf annual plant species (Ditomaso et al. 2013). Dicamba and 2,4-D are California Restricted Materials that have an exception for use in small quantities on small areas only (CDPR 2020). These two herbicides would be used primarily to control broadleaf annuals in small areas for native grassland restoration and research. The selective, post-emergent, herbicides Aminopyralid and Clopyralid (liquid) will be applied to specifically control only annual aster species (e.g. thistles; Ditomaso et al. 2013). Small-scale, ground-based application methods would be used to apply Dicamba and 2,4-D including backpack sprayer (spot spraying) and spray boom on motorized vehicle (UTV and Truck; broadcast spraying). Small-scale, ground-based application methods would be used to apply Aminopyralid and Clopyralid including backpack sprayer (spot spraying) and spray boom on motorized vehicle (UTV and Truck; broadcast spraying). Per the herbicide product labels, there are no restrictions on grazing grasslands following application of Dicamba, 2,4-D, Aminopyralid, and Clopyralid. The total estimated annual area of non-native, tall, broadleaf annuals and non-native grasslands subject to treatment with herbicide is 50 acres.

Prescribed fire may be used to reduce fine fuel loads and the abundance on non-native grasses and forbs in order to restore native grasslands. The total estimated annual area of non-native, tall, broadleaf annuals and non-native grasslands subject to prescribed fire treatment is 10 acres.

Non-native perennial vines in riparian areas

Non-native perennial vines present special challenges to control since they are tangled with native riparian vegetation and grow from extensive rhizome systems in the soil. Additionally, they grow in very close proximity to surface water. The control of non-native perennial vines focuses on manual removal by cutting, removal, and disposal of vines, followed by application of aquatic formulations of Glyphosate and Triclopyr to resprouts (DiTomaso et al. 2013). Due to the dense riparian vegetation and close

proximity to surface water, the herbicide application method is limited to a backpack sprayer (spot spraying). The total estimated annual area of non-native perennial vines in riparian areas subject to treatment with herbicide is 5 acres.

Non-native woody shrubs and large perennial grasses in coastal scrub

Non-native woody shrubs and large grasses typically grow on very steep slopes. Although Pampas grass has very short-lived seed (<1 year) and has no persistent seed bank, French broom has very long lived seed (50+ years) and forms a large, persistent seed bank (Ditomaso et al. 2013). Non-native woody shrubs and large grasses can be removed manually by hand pulling or mechanical grubbing (shovel, pick axe, or weed wrench). More extensive infestations may be more effectively controlled with foliar applications of Glyphosate and Triclopyr (Ditomaso et al. 2013). Due to their location on steep slopes and away from roads, a backpack sprayer (spot spraying) may be the only option for herbicide application. The very long-lived, persistent soil seed bank of French broom that it continually emerges from necessitates dedicated, long-term monitoring and control to achieve eradication. The total estimated annual area of non-native woody shrubs and large perennial grasses subject to treatment with herbicide is 20 acres.

Intended (Maximum) Rates of Application:

Table 4 lists the maximum application rates for each herbicide.

Table 4. Herbicide Common Name and maximum application rates of application.

Common Name	lbs. A.I. per acre
Glyphosate	2.00
Aminopyralid	0.11
Clopyralid	0.25
Dicamba	0.50
2,4-D	0.50
Triclopyr	2.00
Diuron	12.00
Tebuthiuron	4.00

Application Date(s):

Table 5 summarizes the application periods for each herbicide.

Table 5. Herbicide Common Name and application periods.

Common Name	Application Period
Glyphosate	Any time of year, but avoid Winter
Aminopyralid	Spring (March - April)
Clopyralid	Spring (March - April)
Dicamba	Spring (March - April)
2,4-D	Spring (March - April)
Triclopyr	Spring and Summer (March - September)
Diuron	Fall (September - October)
Tebuthiuron	Fall (September - October)

II. Pest (list specific pest(s) and reason(s) for application. Documentation must be attached for species not listed on the label):

WEED SPECIES of CONCERN at COTONI-COAST DAIRIES

Three categories of weeds have significant impacts on natural resources at C-CD, including 1) Non-native, tall, broadleaf annual in grasslands, 2) Non-native perennial vines in riparian areas, and 3) Non-native woody shrubs and large perennial grasses in coastal scrub.

- 1) **Non-native, tall, broadleaf annuals in grasslands** include Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), black mustard (*Brassica nigra*), summer mustard (*Hirschfeldia incana*), radish (*Raphanus sativus*), and poison hemlock (*Conium maculatum*). **Table 6** lists Cal-IPC and CDFA noxious weed ratings. These weeds form tall, dense patches in grasslands and directly compete with native grasses and forbs of the native grassland vegetation type. Purple starthistle (*Centaurea calcitrapa*) is also a non-native annual species of concern that occurs in non-native grasslands. These weeds present a fine fuel fire hazard in close proximity to Day Use Areas and infrastructure and also adversely impact grassland habitat and rangeland quality. These weed species are most common at C-CD in annual grassland areas of Terrace 2 of proposed RMZs #1, #2, and #3. The estimated total project area for the control of non-native, tall, broadleaf annuals in grasslands is 600 acres.

Table 6. Cal-IPC and CDFA noxious weed ratings for non-native, tall, broadleaf annuals in grasslands.

	Italian thistle	milk thistle	black mustard	summer mustard	radish	poison hemlock
Cal-IPC rating →	Moderate	Limited	Moderate	Moderate	Limited	Moderate
CDFA rating →	C	.	.	.	.	.

- 2) **Non-native perennial vines in riparian areas** include cape ivy (*Delairea odorata*) and old man's beard (*Clematis vitalba*). **Table 7** lists Cal-IPC and CDFA noxious weed ratings. These weeds form dense cloaks that smother native riparian plant species and degrade riparian vegetation structure, resulting in degradation of the wetland and riparian habitat that supports several special status fish and amphibian species. These weed species are most common in riparian areas of proposed RMZ #1 including Agua Puerca Creek and proposed RMZ #2 including San Vicente Creek and Liddell Creek. The estimated total project area for the control of non-native perennial vines in riparian areas is 100 acres.

Table 7. Cal-IPC and CDFA noxious weed ratings for non-native perennial vines in riparian areas.

	cape ivy	old man's beard
Cal-IPC rating →	High	Moderate
CDFA rating →	.	A

- 3) **Non-native woody shrubs and large perennial grasses in coastal scrub** include French broom (*Genista monspessulana*) and pampas grass (*Cortaderia jubata*). **Table 8** lists Cal-IPC and CDFA noxious weed ratings. These weeds form dense stands that directly compete with native shrub species of the coastal scrub vegetation type. These weeds are most common at C-CD in drastically disturbed areas including the quarries (abandoned) and along road edges in coastal scrub of proposed RMZs #1 and #2. The estimated total project area for the control of non-native woody shrubs and large perennial grasses in coastal scrub is 100 acres.

Table 8. Cal-IPC and CDFA noxious weed ratings for non-native woody shrubs and large perennial grasses in coastal scrub.

	French broom	pampas grass
Cal-IPC rating →	High	High
CDFA rating →	.	.

Prioritization of weed treatments will generally follow as: 1) Non-native, tall, broadleaf annuals in grasslands, 2) Non-native perennial vines in riparian areas, and 3) Non-native woody shrubs and large perennial grasses in coastal scrub. The methods utilized to control each weed species will be dependent upon several factors including plant growth form (herbaceous forb vs. woody shrub vs vine), plant life cycle (annual vs. perennial), habitat type (upland terrestrial vs. riparian area and wetland), potential to adversely impact non-target species, and potential to impact other resources and activities at C-CD.

III. Major Desired Plant Species Present:

Native plant species and native vegetation types. Native grassland, native wetland, native riparian area, native coastal scrub.

IV. Treatment Site: (describe land type or use, size, stage of growth of target species, slope and soil type).

The treatment site includes the entire Cotoni-Coast Dairies (C-CD) unit of the California Coastal National Monument. C-CD is a topographically complex landscape that includes a diversity of vegetation types including perennial wetlands, riparian areas, non-native weedy/ruderal patches, non-native grassland, native grassland, coastal scrub, chaparral, non-native woody shrubs, coast live oak woodland, broadleaf forest, and conifer forest. Most of the herbicide treatment areas will be located in non-native weedy/ruderal patches, non-native grassland, riparian areas, and coastal scrub, as previously described in **WEED SPECIES of CONCERN at COTONI-COAST DAIRIES**. The current dominant land use is cattle grazing, but will soon also include light recreation (hiking, biking, equestrian), once it is open to public access.

V. Sensitive Aspects and Precautions: (describe sensitive areas [e.g. marsh, endangered, threatened, candidate and sensitive species habitat] and distance to treatment site. List measures taken to avoid impact to sensitive areas).

Sensitive resources include special status amphibian and fish species and the wetland and riparian area habitat that supports them. Other sensitive resources include plants of Native American cultural interest and adjacent private, certified organic farms and private residences. Adverse impacts to wetlands and riparian areas will be minimized by using only herbicides approved for application in aquatic settings and using only spot spray treatment. Adverse impacts to plants of Native American cultural interest and adjacent private, certified organic farms and private residences will be minimized by maintaining adequate buffer zones from herbicide treatment areas. The **Cotoni-Coast Dairies Weed Management Plan** list numerous additional Standard Operating Procedures to avoid impacts to sensitive resources and for human health and safety.

VI. Nontarget Vegetation: (describe impacts to nontarget vegetation in the project area).

The overall Integrated Pest Management strategy described in the Cotoni-Coast Dairies Weed Management Plan is designed to achieve maximum reduction of the target weed species, while minimizing adverse impacts to non-target native plant species and other resources. Some minor, short-term (< 1 year), adverse impact to non-target vegetation is anticipated with the application of Glyphosate, which is a non-selective herbicide. Adverse impacts to non-target vegetation will be minimized by primarily using spot spray application method for glyphosate.

VII. Integrated Weed Management: (describe other aspects of the IWM program that are being used in addition to this chemical application in the project area).

Other Integrated Pest Management methods that will be used to control weed species include manual removal (hand-pulling), mowing, livestock grazing, and prescribed fire.

VIII. REFERENCES

Bureau of Land Management (BLM). 2007. Vegetation Treatment Using Herbicides on BLM Lands in Seventeen Western States Programmatic EIS.

Bureau of Land Management (BLM). 2016. The Record of Decision on Vegetation Treatments Using Aminopyralid, Floroxypyr and Rimsulfuron.

California Department of Pesticide Regulation. 2020. California Restricted Materials Requirements. Available: <https://www.cdpr.ca.gov/docs/enforce/dpr-enf-013a.pdf>

DiTomaso J.M. et al. 2013. Weed Control in Natural Areas in the Western United States. University of California, Davis. Department of Plant Sciences, University of California, Davis. Weed Research and Information Center. 544 pp.

Hayes G.F. and K.D. Holl. 2003. Cattle grazing impacts on annual forbs and vegetation composition of mesic grasslands in California. *Conservation Biology* 17:1694-1702.

Sotoyome RCD. 2019. Grazing Handbook. A Guide for Resource Managers in Coastal California. <https://www.carangeland.org/images/GrazingHandbook.pdf> [Accessed December 3, 2019]

Stromberg M., Corbin J., and C. D'Antonio. 2007. California Grasslands. University of California Press. 408 pp.

Appendix G - Cotoni-Coast Dairies Visitor Use Estimates, July 2020.

This appendix documents the BLM's estimate of visitor use for Cotoni-Coast Dairies (C-CD). Estimates were developed for each of four management alternatives under consideration in the RMPA/EA. Estimates were then used to determine parking needs under each alternative.

METHODOLOGY

The anticipated future visitor use at C-CD was estimated using the assumption that visitor use will be directly tied to two key variables: recreational opportunities provided (in this case primarily hiking, mountain biking, horseback riding) and ease of access (i.e. proximity to communities and major transportation corridors). Visitor use was estimated by comparing current visitor use at nearby parks and open spaces in the region. Visitor use at comparable parks and open spaces is based on estimates prepared by Placeworks (Minn and Fleischmann 2016) for the neighboring San Vicente Redwoods property, and the Santa Cruz County Regional Transportation Commission's North Coast Rail Trail Final Environmental Impact Report (2019).

Comparable parks and open spaces include Wilder Ranch State Park, Soquel Demonstration Forest, and San Vicente Redwoods. Wilder Ranch State Park is a 7,000-acre property with approximately 34 miles of trails for hiking, mountain biking, and horseback riding. The property also provides direct access to several popular beaches and supports tourism associated with agricultural leases on the State Park. The annual visitor use at Wilder Ranch is estimated to be 472,809, representing approximately 9,000 visitors per week. Trail use is estimated to be equivalent to 38 visitors per day per mile of trail. Wilder Ranch has significantly higher use than other parks on the North Coast of Santa Cruz. The high use is due largely to the proximity to Santa Cruz and the diversity of recreation opportunities provided.

The Soquel Demonstration State Forest (SDSF) is a 2,681-acre property with 24 miles of trail and an estimated 106,094 visitors per year, equivalent to over 2,000 visitors per week, for hiking, mountain biking, horseback riding. The annual visitor use is equivalent to 8 visitors per day per mile of trail. Over 60 percent of visitors come on the weekend versus during the week and mountain bike riding is the most common activity. The SDSF is more remote than either C-CD or Wilder Ranch. Recreational opportunities are also more limited than those provided at Wilder Ranch.

The Forests of Nisene Marks State Park is a 10,257-acre property with 30 miles of trail and an estimated annual visitation of 106,094 visitors per year, equivalent to a weekly visitation of approximately 2,000 visitors per week. Recreational opportunities on this property are similar to those provided at SDSF. However, Nisene Marks is significantly closer in proximity to major population centers in Santa Cruz County and the Highway One transportation corridor when compared to SDSF. Annual visitor use at this park is estimated to be equivalent to 10 visitors per day per mile of trail.

The San Vicente Redwoods (SVR) is a 7,000 acre property with approximately 28 miles of trails planned for hiking, mountain biking, horseback riding. A potential future trail connection between SVR and the C-CD property would result in visitors to both properties. PlaceWorks (Minn and Fleischmann 2016) anticipates that 47 parking spaces and 3-5 equestrian trailer spaces would accommodate demand at SVR based on projections for approximately 97,000 annual visitors, which is equivalent to less than 6-8 visitors per day per mile of trail.

The Santa Cruz County Regional Transportation Commission certified the North Coast Rail Trail (NCRT) Final Environmental Impact Report (Volume 2, Draft EIR) in 2019. Daily use estimates for summer weekends were based on the assumption that 85% of visitors would arrive by vehicle, with an average 2.5 persons per vehicle, and observations of parking turnover at the Davenport Lot: North, Bonny Doon Beach, and Panther/Yellowbank Beach parking lots. They estimated 300 vehicle trips per day would need 100 parking spaces in the peak hour because up to 50 percent of parking spaces turned over at these parking lots. This EIR determined that 77% of visitors will be residents of Santa Cruz County, who would be more likely to access the trail using alternative transportation (e.g. drive or walk from locations within the City of Santa Cruz).

COTONI-COAST DAIRIES

Visitor use estimates for Cotoni-Coast Dairies are provided below for each alternative presented in the Draft RMPA/EA. Visitor use is expected to vary based on the type of recreational opportunities provided and the accessibility of those opportunities from major population centers and transportation corridors.

Alternative A

Recreational Opportunities. Under Alternative A, the BLM would develop 2.7 miles of trails for day use hiking and on-lease dog walking. Mountain biking and horseback riding would not be allowed. Recreational opportunities are more limited than those provided at the comparable properties described above.

Accessibility. Under Alternative A, the BLM would develop two locations for public access to the recreational trails from staging areas on Swanton Road and Bonny Doon Road. Neither of these access points is directly adjacent to Highway One, nor do they connect to regional trail systems (i.e. North Coast Rail Trail, San Vicente Redwoods). Under this alternative, accessibility would be similar to SDSF, the Forests of Nisene Marks and San Vicente Redwoods.

Annual Visitation Estimate. The BLM estimates that 50,000 people will visit C-CD annually under this alternative due to the factors described above. As with the NCRT EIR, approximately 75% of these visitors are likely to be residents of Santa Cruz County. Many of these visitors would be visiting C-CD in lieu of or in combination with another recreation destination on the North Coast (e.g. Wilder Ranch State Park, Coast Dairies State Park). The BLM assumes that initial visitation will be higher for 6-12 months due to the novelty of public access to the C-CD. However, given limited visitor services, facilities, and recreation opportunities under Alternative A, it is reasonable to expect annual visitor use will decrease after the inauguration of this unit of the California Coastal National Monument.

Estimated Visitors per mile of trail. The BLM assumes an average of 10 visitors per mile of trail based on comparable properties in the region.

Alternative B

Recreational Opportunities. Under Alternative B, the BLM would construct approximately 20 miles of trails for hiking, mountain biking, and horseback riding. Mountain biking trail opportunities would be largely confined to the northern half of the property (north of Warranella Road), while horseback riding opportunities would be confined to the southern half of the property (south of Bonny Doon Road). Hikers would be allowed on all trails. The trail network

would include connections to regional trail networks on the North Coast Rail Trail and San Vicente Redwoods. Facilities would be designed for day-use and may include kiosks and vault toilets.

Recreational opportunities would be comparable to those provided at Wilder Ranch, Forests of Nisene Marks, and San Vicente Redwoods. However, opportunities are less than those provided at Wilder Ranch, particularly because beach access drives a significant number of visitors to Wilder Ranch.

Accessibility. Alternative B proposes to establish parking areas at three locations, two year-round access points at Warrenella Road and Marina Ranch Road and a seasonal access point further up Warrenella Road. There would also be a trailhead connection via a pedestrian bridge at Panther Beach, providing two access points directly adjacent to Highway One. Accessibility is comparable to Wilder Ranch, although further removed from the major metropolitan center of Santa Cruz. It is anticipated that visitation will be roughly split between the two access points north of Davenport and the two access points south of Davenport.

Annual Visitation Estimate. The BLM estimates that 150,000 people will visit C-CD annually under this alternative due to the factors described above. As with the NCRT EIR, approximately 75% of these visitors are likely to be residents of Santa Cruz County. Many of these visitors would be visiting C-CD in lieu of or in combination with another recreation destination on the North Coast (e.g. Wilder Ranch State Park, Coast Dairies State Park). The BLM assumes that initial visitation will be higher for 6-12 months due to the novelty of public access to the C-CD. However, due to the phased buildout planned under this alternative, full annual visitation numbers will not be reached for several years.

Visitors per mile of trail. The BLM assumes an average of 20 visitors per mile of trail based on comparable properties in the region. The BLM assumes that initial visitation per mile of trail will be higher for 6-12 months due to the novelty of public access to the C-CD and the phased buildout of trails on the property.

Alternative C

Recreational Opportunities. Under Alternative C, the BLM would construct approximately 29 miles of trails for hiking, mountain biking, and horseback riding. Most of these trails would be accessible for mountain biking, horseback riding, and hiking. The trail network would include connections to regional trail networks on the North Coast Rail Trail and San Vicente Redwoods. Facilities would be designed for day-use and may include kiosks and vault toilets.

Recreational opportunities would be comparable to those provided at Wilder Ranch, Forests of Nisene Marks, and San Vicente Redwoods. However, opportunities are less than those provided at Wilder Ranch, particularly because beach access drives a significant number of visitors to Wilder Ranch.

Accessibility. Accessibility would be similar to that described for Alternative B, except there is one additional parking lot proposed on Swanton Road. This access point would be approximately 16 miles north of the City of Santa Cruz. It is anticipated that visitation would be notably higher at other locations in closer proximity to Santa Cruz and Highway One.

Annual Visitation Estimate. The BLM estimates that 250,000 people will visit C-CD annually under this alternative due to the factors described above. As with the NCRT EIR, approximately 75% of these visitors are likely to be residents of Santa Cruz County. Many of these visitors would be visiting C-CD in lieu of or in combination with another recreation destination on the North Coast (e.g. Wilder Ranch State Park, Coast Dairies State Park). The BLM assumes that initial visitation will be higher for 6-12 months due to the novelty of public access to the C-CD. However, due to the phased buildout planned under this alternative, full annual visitation numbers will not be reached for several years.

Visitors per mile of trail. The BLM assumes 30 visitors per mile of trail due to the multi-use nature of trails in this alternative. This would provide a comparable estimate to Wilder Ranch, while accounting for the closer proximity of that park to Santa Cruz.

Alternative D

Recreational Opportunities. Under Alternative D, the BLM would construct approximately 27 miles of trails for hiking, mountain biking, and horseback riding. Similar to Alternative B, mountain biking trail opportunities would be largely confined to the northern half of the property (north of Warranella Road), while horseback riding opportunities would be confined to the southern half of the property (south of Bonny Doon Road). Hikers would be allowed on all trails. The trail network would include connections to regional trail networks on the North Coast Rail Trail and San Vicente Redwoods. Facilities would be designed for day-use and would include kiosks and vault toilets.

Recreational opportunities would be comparable to those provided at Wilder Ranch, Forests of Nisene Marks, and San Vicente Redwoods. However, opportunities are less than those provided at Wilder Ranch, particularly because beach access drives a significant number of visitors to Wilder Ranch.

Accessibility. Similar to Alternative B, Alternative D proposes to establish parking areas at three locations, two year-round access points at Warrenella Road and Marina Ranch Road and a seasonal access point further up Warrenella Road. There would also be a trailhead connection via a pedestrian bridge at Panther Beach, providing two access points directly adjacent to Highway One. Accessibility is comparable to Wilder Ranch, although further removed from the major metropolitan center of Santa Cruz. It is anticipated that visitation will be roughly split between the two access points north of Davenport and the two access points south of Davenport.

Annual Visitation Estimate. At full buildout, the BLM estimates that up to 250,000 people will visit C-CD annually under this alternative due to the factors described above. As with the NCRT EIR, approximately 75% of these visitors are likely to be residents of Santa Cruz County. Many of these visitors would be visiting C-CD in lieu of or in combination with another recreation destination on the North Coast (e.g. Wilder Ranch State Park, Coast Dairies State Park). The BLM assumes that initial visitation will be higher for 6-12 months due to the novelty of public access to the C-CD. However, due to the phased buildout planned under this alternative, annual visitation numbers projected for full buildout will not be reached for several years. Based on monitoring during the phased approach to implementation of the RMPA, the BLM will be able to determine the average demand for parking during peak hours and evaluate adaptive management options to accommodate new information and/or circumstances.

While visitor use (and thus parking demand) is not expected to exceed estimates for Alternatives B and C, additional parking capacity was included within this alternative in order to reduce the potential for offsite parking during peak visitation weekends.

Visitors per mile of trail. The BLM assumes an average of 20 visitors per mile of trail based on comparable properties in the region. The BLM assumes that initial visitation per mile of trail will be higher for 6-12 months due to the novelty of public access to the C-CD and the phased buildout of trails on the property.

ESTIMATED PARKING DEMAND

Parking demand was estimated for C-CD based on the existing parking supply/demand discussed above. Parking estimates are based on the high end of the range of expected annual visitors.

Alternative A anticipates that approximately 40 parking spaces and zero trailer spaces would accommodate demand based on the following assumptions:

Visitation projections of 50,000 annual visitors

75-percent of visitation will take place on the weekend, equally distributed between Saturday and Sunday (equivalent to 350 visitors/day on a weekend)

95-percent of visitors will drive-in (others will walk from Bonny Doon Beach parking area)

There will be an average of 2.5 visitors/vehicle

Vehicles will stay an average of 2 hours, therefore 6 vehicles can occupy one parking space each (6 vehicles/parking space/day)

Demand will be lower than nearby State Parks due to longer distance and lower trail mileage.

Alternative B anticipates that approximately 78 parking spaces and 1-2 equestrian trailer spaces would accommodate demand based on the following assumptions:

Visitation projections of 150,000 annual visitors

75-percent of visitation will take place on the weekend, equally distributed between Saturday and Sunday (equivalent to 700 visitors/day on a weekend)

65-percent of visitors will drive-in (30% of visitors would be expected to access the property via the Yellowbank/Panther Beach Highway One overpass and 5% would be expected to access the property from San Vicente Redwoods)

There will be an average of 2.5 visitors/vehicle

Vehicles will stay an average of 2 hours, therefore 6 vehicles can occupy one parking space each (6 vehicles/parking space/day)

Equestrian trailer demand will be lower than nearby State Parks due to longer distance and lower trail mileage.

Alternative C anticipates that 100 parking spaces and 3-5 equestrian trailer spaces would accommodate demand based on the following assumptions:

Visitation projections of 250,000 annual visitors

75-percent of visitation will take place on the weekend, equally distributed between Saturday and Sunday (Equivalent to 1500 visitors/day on a weekend)

Staging areas at will have adequate capacity to accommodate visitors, including equestrian trailers

65-percent of visitors will drive-in (30% of visitors would be expected to access the property via the Yellowbank/Panther Beach Highway One overpass and 5% would be expected to access the property from San Vicente Redwoods)

There will be an average of 2.5 visitors/vehicle

Vehicles will stay an average of 1.5 hours, therefore 6 vehicles can occupy one parking space each (6 vehicles/parking space/day)

Alternative D anticipates that approximately 167 standard vehicle parking spaces and 4 equestrian trailer spaces would accommodate demand based on the following assumptions:

Visitation projections of 150,000-250,000 annual visitors during Phase 1 and Phase 2, respectively.

75-percent of visitation will take place on the weekend, equally distributed between Saturday and Sunday (equivalent to 1,500 visitors/day on a weekend)

65-percent of visitors will drive-in (30% of visitors would be expected to access the property via the Yellowbank/Panther Beach Highway One overpass and 5% would be expected to access the property from San Vicente Redwoods)

There will be an average of 2.5 visitors/vehicle

Vehicles will stay an average of 2 hours, therefore 6 vehicles can occupy one parking space each (6 vehicles/parking space/day)

Equestrian trailer demand will be lower than nearby State Parks due to longer distance and lower trail mileage.

SUMMARY

The RMPA/EA assumes a conservative ratio of 10 trail users per mile of trail under Alternative A and 20 trail users per mile of trail under Alternative B based on the average number of visitors on the comparable properties in Santa Cruz County. The RMPA also analyzes a maximum ratio of 30 trail users per mile of trail under Alternative C and D based on comments on the BLM's Draft RMPA. Based on these assumptions, the total estimated annual visitor use for Alternative A is 50,000; the total annual visitor use

for Alternative B is 150,000; and the total annual visitor use for Alternative C is 250,000. The total annual visitor use for Alternative D is estimated to fall between Alternatives B and C (150,000-250,000). New vehicle trips projected to travel to C-CD were estimated based on the anticipated number of trail users and the proportion of trail users expected to arrive and leave by motor vehicle. As a result, daily use of the C-CD during average summer weekends was estimated to range from 350 visitors during summer weekends under Alternative A to 1,500 visitors during summer weekends under Alternative C. As described above, approximately 75% of visitors to C-CD are likely to be residents of Santa Cruz County. Many of these visitors would be visiting C-CD in lieu of or in combination with another recreation destination on the North Coast (e.g. Wilder Ranch State Park, Coast Dairies State Park).

Based on these estimates, it is recommended that the staging areas be designed to accommodate up to 167 standard vehicles and 4 trailer spaces under Alternative D, 100 vehicles and 3-5 trailers under Alternative C, 78 spaces and 1-2 trailer spaces for Alternative B, and 40 vehicles and zero trailer spaces under Alternative A to maximize parking space and to minimize the impacts of overflow parking on the surrounding neighborhoods.

RECOMMENDATION

Based on these estimates, it is recommended that the staging areas be designed to accommodate up to 167 standard vehicles and 4 trailer spaces under Alternative D, 100 vehicles and 3-5 trailers under Alternative C, 78 spaces and 1-2 trailer spaces for Alternative B, and 40 vehicles and zero trailer spaces under Alternative A to maximize parking space and to minimize the impacts of overflow parking on the surrounding neighborhoods.

Appendix H: References

- Alonso, A. & Castro-Diaz, P. (2012). The exotic mud snail *Potamopyrgus antipodarum* (Hydrobiidae, Mollusca): state of the art of a worldwide invasion. *Aquatic Sciences* 74:375-383.
- Amme, D. (1999). Range survey and conservation grazing program for Coast Dairies and Land Company. Prepared for Coast Dairies and Land Company.
- Banks, P.B., & Bryant, J.V. (2007). Four-legged friend or foe? Dog walking displaces native birds from natural areas. *Biology Letters* 3(6), 611-613.
- Barbour, M.G., Keeler-Wolf, T., & Schoenherr, A.A. (2007). *Terrestrial vegetation of California*. Berkely, CA: University of California Press. 712 p.
- Beale, C.M., & Monaghan, P. (2004). Human disturbance: people as predation-free predators? *Journal of Applied Ecology* 41:335-343.
- Beck H.E., Zimmermann, N.E., McVicar, T.R., Vergopolan, N., Berg, A., & Wood E.F. (2018). Present and future Köppen-Geiger climate classification maps at the 1-km resolution. *Scientific Data* 5, 180214.
- Bennett D.M., Dudley, T.L., Cooper, S.D. & Sweet, S.S. (2015). Ecology of the invasive New Zealand mud snail, *Potamopyrgus antipodarum* (Hydrobiidae), in a Mediterranean-climate stream system. *Hydrobiologia* 746, 375-399.
- Borunda, A. (2018). See how a warmer world primed California for large fires. National Geographic. Retrieved January 8, 2020 from <https://www.nationalgeographic.com/environment/2018/11/climate-change-california-wildfire/#close>.
- Bowman, R.H. and D.C. Estrada. (1980). Soil survey of Santa Cruz County, California. Washington, DC.: U.S. Department of Agriculture, Soil Conservation Service, 160 p.
- Brabb, E.E. (1997). Geologic map of Santa Cruz County, California: a digital database: U.S. Geological Survey, Open-File Report OF-97-489, scale 1:62,500. Retrieved from https://ngmdb.usgs.gov/Prodesc/proddesc_18796.htm
- Brittingham, M. (nd.) Habitat fragmentation. Retrieved on January 16, 2020 from http://www.marcellusfieldguide.org/index.php/guide/ecological_concepts/habitat_fragmentation/
- Bulger, J.B., Scott, N.J., & Seymour, R.B. (2003). Terrestrial activity of adult California red-legged frogs *Rana aurora draytonii* in coastal forest and grasslands. *Biological Conservation* 110, 85-95.
- [BLM] Bureau of Land Management. (1998). BLM Manual 8270. *General procedural guidance for paleontological resource management*. Bureau of Land Management. 12p.
- [BLM] Bureau of Land Management. (2005a). *California Coastal National Monument Resource Management Plan*. California State Office, Sacramento CA
- [BLM] Bureau of Land Management. (2005b). *Land use planning handbook, H-1601-1*. Washington D.C.: Department of the Interior, Bureau of Land Management.

- [BLM] Bureau of Land Management. (2006). *Proposed Resource Management Plan for the Southern Diablo Mountain Range and Central Coast of California*.
- [BLM] Bureau of Land Management. (2007). *Resource Management Plan for the Southern Diablo Mountain Range and Central Coast of California Record of Decision*.
- [BLM] Bureau of Land Management. (2008). Instruction Memorandum No. 2008-009. Potential Fossil Yield Classification (PFYC) System.
- [BLM] Bureau of Land Management. (2014). Interim Management Plan for Cotoni-Coast Dairies.
- [BLM] Bureau of Land Management. (2016). Instructional Memorandum No. 2016-124. Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands.
- [BLM] Bureau of Land Management. (2019). Scoping report. Retrieved from <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage&currentPageId=181479>
- Cal-Adapt. (2019). Cal-Adapt. Exploring California's climate change research. Retrieved on October 29, 2019 from <https://cal-adapt.org/>.
- [CalFire] California Department of Forestry and Fire Protection. (2009). San Mateo-Santa Cruz Unit Lockheed Fire Post Fire Risk Assessment. Retrieved on September 18, 2020 from http://www.santacruzcountyfire.com/resource_mgmt/final_lockheed_ra.pdf
- [CCH] Consortium of California Herbaria (CCH). (2019). Consortium of California Herbaria. Georeferenced herbarium specimen records. Referenced on October 29, 2019 from <http://ucjeps.berkeley.edu/consortium/> interfaced through Calflora Website <http://www.calflora.org/>.
- [CDFW] California Department of Fish and Wildlife. (1996). Stream inventory report – San Vicente Creek (Surveyed 1996).
- [CDFW] California Department of Fish and Wildlife. (2013). Stream inventory report – San Vicente Creek (Surveyed 2010).
- [CGS] California Geological Society. (2002). California geomorphic provinces. Retrieved on February 5, 2020 from <https://www.conservation.ca.gov/cgs/Documents/CGS-Note-36.pdf>
- Clark, J.C. (1981) Stratigraphy, paleontology, and geology of the central Santa Cruz Mountains, California Coast Ranges. USGS Professional Paper 1168. <https://doi.org/10.3133/pp1168>
- [CNDDDB] California Natural Diversity Database. (2019). California natural diversity database. California Department of Fish and Wildlife, Sacramento, California, USA. Retrieved on October 29, 2019 from map.dfg.ca.gov/bios/?tool=cnddbQuick.
- Cushman, H. J., Cooper, M., Meentemeyer, R. K., & Benson, S. (2008). Human activity and the spread of *Phytophthora ramorum*. In: Frankel, Susan J.; Kliejunas, John T.; Palmieri, Katharine M., tech. coords. 2008. *Proceedings of the sudden oak death third science symposium. Gen. Tech. Rep. PSW-GTR-214* (pp. 179-180). Albany, CA: US Department of Agriculture, Forest Service, Pacific Southwest Research Station.

- Dana, R.H., Jr. (1964). *Two years before the mast*. New York: Signet Classic.
- Delgado, J.P. (1990). *To California by sea: a maritime history of the California Gold Rush*. Columbia, SC: University of South Carolina Press.
- Douglass, M., & Wandsnider, L. (2012). Fragmentation resistant measures of chipped stone abundance and size: results of an experimental investigation of the impact of cattle trampling on surface chipped stone scatters. *Plains Anthropologist* 57(224), 353-365.
- [ESA] Environmental Science Associates. (2001). *Coast Dairies long-term resource protection and use plan: existing conditions report for the coast dairies property*. Prepared for the Trust for Public Land. San Francisco, CA. 603 pp.
- [ESA] Environmental Science Associates. (2004). *Coast Dairies long-term resource protection and use plan: existing conditions report for the coast dairies property*. Prepared for the Trust for Public Land. San Francisco, CA. 360 pp.
- Fellers, G.M., & Kleeman, P.M. (2007). California red-legged frog (*Rana draytonii*) movement and habitat use: implications for conservation. *Journal of Herpetology* 41, 176-286.
- Field, C.B., Chiariello, N.R., & Diffenbaugh, N.S. (2016). Climate Change Impacts. In H. Mooney and E. Zavaleta (eds.), *Ecosystems of California* (pp. 251-264). Berkeley, CA: University of California Press.
- Gaynor, K.M., Hohnowski, C.E., Carter, N.H., & Brashares, J.S. (2018). The influence of human disturbance on wildlife nocturnality. *Science* 360(6394), 1232-1235.
- Gilbert, M.M. & Chalfoun, A.D. (2011). Energy development affects populations of sagebrush songbirds in Wyoming. *Wildlife Management* 75, 816-824.
- Gill, J.A., Sutherland, W.J., & Watkinson, A.R. (1996). A method to quantify the effects of human disturbance on animal populations. *Journal of Applied Ecology* 33, 786-792
- Gompper, M.E. (2014). The dog-human-wildlife interface: assessing the scope of the problem. In *Free-Ranging Dogs and Wildlife Conservation*. New York, NY: Oxford University Press. 336pp.
- Gordon, R.T, Karl, J.W, Taylor, J.J, Spurrier, C.S., Karl, M.S., Bobo, M.R., & Herrick, J.E. (2015) *Consistent indicators and methods and a scalable sample design to meet Assessment, Inventory, and Monitoring information needs across scales*. Society for Range Management.
- Hayes, G. (2002). *Cattle grazing effects on California coastal prairie and associated annual forbs* (Doctoral dissertation). Santa Cruz: University of California. 152 p.
- Hayes, G.F. & Holl, K.D. (2003). Cattle grazing impacts on annual forbs and vegetation composition of mesic grasslands in California. *Conservation Biology* 17, 1694-1702.
- Hecht B. (1982). *Geomorphology and hydrology of lower Arana Gulch, Santa Cruz, California, Bases for planning habitat restoration and sediment management*. HEA, a division of J.H. Kleinfelder & Associates consulting report prepared for Harvey & Stanley Associates. 104 p.
- Hennings, L.A. (2016). *The impacts of dogs on wildlife and water quality: a literature review*. Portland, OR: Metro Parks and Nature. 2016.

- Huaraca, L.F., Chamorro, S.A., Hernández, V., Bay-Schmith, E. and Villamar, C.A., 2020. *Comparative acute toxicity of glyphosate-based herbicide (GBH) to Daphnia magna, Tisbe longicornis, and Emerita analoga*. Journal of Environmental Science and Health, Part B, pp.1-9.
- Huddart, D., & Stott, T. (2019) *Outdoor Recreation: environmental impacts and management*. Retrieved from DOI: 10.1007/978-3-319-97758-4
- Jensen, K. (1976). *The Lime Industry in Santa Cruz County* (Unpublished master's thesis). San Jose State University, San Jose, CA.
- Jepson eFlora. (2019). Jepson Flora Project: Jepson eFlora. University and Jepson Herbaria, University of California, Berkeley, CA. Retrieved on October 29, 2019 from <http://ucjeps.berkeley.edu/eflora/>.
- Kerans, B.L., Dybdahl, M.F., Gangloff, M.M., & Jannot, J.E. (2005). *Potamopyrgus antipodarum*: distribution, density, and effects on native macroinvertebrate assemblages in the Greater Yellowstone Ecosystem. *Journal of the North American Benthological Society* 24, 123-138.
- Kindon, A.W. (2018). Archaeological investigations at the Adams Creek Lime Kilns Site (CA-SCr-338H). In: *Shipwrecks and lime kilns: the hidden history of 19th century sailors and quarrymen of the Central Coast, Publications in Cultural Heritage Number 35, 2018*. Sacramento, CA: Department of Parks and Recreation Cultural Resources Division.
- Knight, R.L., & Cole, D.N. (1991). Effects of recreational activity on wildlife in wildlands. *Transactions of the North American Wildlife and Natural Resources Conference* 56, 238-247.
- Knobel, D.L., Butler, J.R.A., Lembo, T., Critchlow, R., & Gompper, M.E. (2014). Dogs, disease, and wildlife (pp. 144–169). In: M.E. Gompper (ed.) *Free-Ranging Dogs and Wildlife Conservation*. New York, NY: Oxford University Press.
- Krober A.L. (1976). *Handbook of the Indians of California*. New York: Dover Publications.
- Krusic, R.A., Yamasaki, M., Neefus, C.D., & Pekins, P.J. (1996). Bat habitat use in white mountain national forest. *Journal of Wildlife Management* 60(3), 625-631.
- Krynak, K.L., Burke, D.J. and Benard, M.F., 2017. *Rodeo™ herbicide negatively affects Blanchard's Cricket Frogs (Acris blanchardi) survival and alters the skin-associated bacterial community*. *Journal of Herpetology*, 51(3), pp.402-410.
- Larson, C.L., Reed, S.E., Merenlender, A.M., & Crooks, C.R. (2016). Effects of recreation on animals revealed as widespread through a global systematic review. *PLOS One*. <https://doi.org/10.1371/journal.pone.0167259>
- Larson, C.L., Reed, S.E., Merenlender, A.M., & Crooks, C.R. (2019). A meta-analysis of recreation effects on vertebrate species richness and abundance. *Conservation Science and Practice* 1:e93. <https://doi.org/10.1111/csp2.93>
- Mackenzie, A., McGraw, J. & Freeman, M. (2011). *Conservation blueprint for Santa Cruz County: an assessment and recommendations from the Land Trust of Santa Cruz County*. Santa Cruz, CA: Land Trust of Santa Cruz County. 180 pages. Retrieved from at <http://www.landtrustsantacruz.org/blueprint>
- Mallord, J.W., Dolman, P.M., Brown, A.F., & Sutherland, W.J. (2006). Linking recreational disturbance to population size in a ground nesting passerine. *Journal of Applied Ecology* 44, 185-195.

- McBrearty, S., Bishop, L., Plummer, T., Dewar, R., & Conrad, N. (2019). Tools underfoot: human trampling as an agent of lithic artifact edge modification. *American Antiquity* 63 (1), 108-129.
- McCoy KA and Peralta AL (2018) *Pesticides Could Alter Amphibian Skin Microbiomes and the Effects of Batrachochytrium dendrobatidis*. *Front. Microbiol.* 9:748. doi: 10.3389/fmicb.2018.00748
- McGinnis S.M. (1991). An evaluation of the anadromous fish spawning and rearing habitats of the Liddell and San Vicente Creek Systems, Santa Cruz County, California. Prepared for RMC Pacific Materials, October 25.
- Miller, S.G., Knight, R.L., & Miller, C.K. (2001). Wildlife responses to pedestrians and dogs. *Wildlife Society Bulletin* 29, 124-132.
- Milliken R. (1995). *A Time of Little Choice: The disintegration of Tribal culture in the San Francisco Bay area, 1769-1810*. Menlo Park, CA: Ballena Press.
- Minn, I., & Fleischmann, I. (2016, January 12). *Projected visitor counts and parking needs* [Memorandum]. Placeworks.
- Minnich R.A. (2008). *California's fading wildflowers: Lost legacy and biological invasions*. Berkeley, CA: University of California Press. 344 pp.
- Morrison, C.D., Boyce, M.S., Nielsen, S.E., & Bacon, M.M. (2014). Habitat selection of re-colonized cougar population in response to seasonal fluctuations of human activity. *Journal of Wildlife Management* 78, 1394-1403.
- Motta, E.V., Raymann, K. and Moran, N.A., 2018. Glyphosate perturbs the gut microbiota of honey bees. *Proceedings of the National Academy of Sciences*, 115(41), pp.10305-10310.
- Moyle P.B., Yoshiyama, R.M., Williams, J.E., & Wikramanayake, E.D. (1995). Fish species of special concern in California, Second Edition. Prepared for the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA. Contract No. 2128IF.
- [NMFS] National Marine Fisheries Service. (2012). Final Recovery Plan for Central California Coast Coho salmon Evolutionarily Significant Unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, California.
- Nieto, N.C., Madigan, J.E., & Foley, J.E. (2010). The duskyfooted woodrat (*Neotoma fuscipes*) is susceptible to infection by *Anaplasma phagocytophilum* originating from woodrats, horses, and dogs. *Journal of Wildlife Disease* 46, 810–817.
- Nielsen, T. Palmatier, S.M., & Proffitt, A. 2019. *Literature review: recreation conflicts focused on emerging e-bike technology*. Boulder County Parks and Open Space.
- Nolan Associates. (2016). Final Report on the Karst Protection Zone Investigation. Retrieved from <http://www.slvwd.com/pdf/KarstMappingProgram.pdf>.
- Quinn, J.H., Girard, Y.A., Gilardi, K., Hernandez, Y., Poppenga, R., Chomel, B., Foley, J.E., & Johnson, C.K. (2012). Pathogen and rodenticide exposure in American badgers (*Taxidea taxus*) in California. *Journal of Wildlife Diseases* 48(2), 467–472.

- Reidy, J.L., Thompson, F.R., III, & Peak, R.G. (2009). Factors affecting golden-cheeked warbler nest survival in urban and rural landscapes. *Journal of Wildlife Management* 73, 407-413.
- Reilly, M.L., Tobler, M.W., Sonderegger, D.L & Beier, P. (2017). Spatial and temporal response of wildlife to recreational activities in the San Francisco Bay ecoregion. *Biological Conservation* 207:117-126.
- [RCD] Resource Conservation District of Santa Cruz County. (2014). San Vicente Creek Watershed Plan for Salmonid Recovery. Retrieved on January 6, 2020 from http://www.rcdsantacruz.org/images/watershed_plans/sv-existing-cond-report-final-2014-04-09-low-res.pdf.
- Riley, S.P.D., Foley, J., & Chomel, B. (2004). Exposure to feline and canine pathogens in bobcats and gray Foxes in urban and rural zones of a National Park in California. *Journal of Wildlife Diseases* 40(1), 11–22.
- River Alliance of Wisconsin. (2017). New Zealand mudsnails invading southern Wisconsin, anglers are likely culprit. Urban Milwaukee. Milwaukee, WI. Retrieved on December 27, 2017 from <https://urbanmilwaukee.com/pressrelease/new-zealand-mudsnails-invading-southern-wisconsin-anglers-are-likely-culprit/>.
- RRM (RRM Design Group). (2018). Cotoni-Coast Dairies trail feasibility study.
- [SCCRTC] Santa Cruz County Regional Transportation Commission. (2019). North Coast Rail Trail Final Certified Environmental Impact Report.
- Sawyer, J.O., Keeler-Wolf, T., & Evens, J.M. (2009). *A manual of California vegetation* (2nd ed.) Sacramento, CA: California Native Plant Society Press. 1300 p.
- Shueler, T. (2000). Microbes and urban watersheds: concentrations, sources, and pathways. *Watershed Protection Techniques* 3: 1-12.
- Smith JA, Wang Y, Wilmers CC. (2015) *Top carnivores increase their kill rates on prey as a response to human-induced fear*. Proc. R. Soc. B 282: 20142711. <http://dx.doi.org/10.1098/rspb.2014.2711>
- SoilWeb. (2019). SoilWeb: an online soil survey browser. California Soil Resource Lab. University of California, Davis. Retrieved on October 29, 2019 from <https://casoilresource.lawr.ucdavis.edu/gmap/>.
- Soulard, D.F. (2017). Impacts of recreational trails on wildlife species: implications for Gatineau Park. (master's thesis). Retrieved from https://ruor.uottawa.ca/bitstream/10393/36819/1/Soulard_Danielle_Impact_of_Recreation_Trails_on_Wildlife_Species.pdf
- Spitzer, R.M.E. (2015). *The Maritime Shipping Industry of the geographic region bounded by Aptos and Alviso, CA, 1850-1950* (master's thesis). Retrieved from: <http://www.sjsu.edu/anthropology/docs/projectfolder/Spitzer-Rebecca-Thesis.pdf>
- Sponsler, D.B., Grozinger, C.M., Hitaj, C., Rundlöf, M., Botías, C., Code, A., Lonsdorf, E.V., Melathopoulos, A.P., Smith, D.J., Suryanarayanan, S. and Thogmartin, W.E., 2019. *Pesticides and pollinators: A socioecological synthesis*. Science of the Total Environment, 662, pp.1012-1027.

- Stoffer, P.W., & Gordon, L.C. (2001). *Geology and natural history of the San Francisco Bay area; a field-trip guidebook: U.S. Geological Survey Bulletin 2188*, 194 p. Retrieved from <https://pubs.usgs.gov/bul/b2188/>.
- Suraci, J.P., Clinchy, M., Zanette, L.Y., & Wilmers, C.C. (2019). Fear of humans as apex predators has landscape-scale impacts from mountain lions to mice. *Ecology Letters* 22, 1578-1586.
- Taylor, K., Anderson, R., Taylor, P., Longden, K., & Fisher, P. (2005). Dogs, access and nature conservation. *English Nature Research Report* 649, Peterborough
- Taylor, A.R., & Knight, R.L. (2003). Wildlife responses to recreation and associated visitor perceptions. *Ecological Applications* 13, 951-963.
- Thorne J.H., Boynton, R.M., Holguin, A.J., Stewart, J.A.E., & Bjorkman J. (2016). *A climate change vulnerability assessment of California's terrestrial vegetation*. Final report to California Department of Fish and Wildlife. Davis, California: University of California, Davis. Retrieved from https://lccnetwork.org/sites/default/files/Resources/California%20Climate%20Vulnerability%20Assessment%20of%20Macrogroup%20Vegetation_01.31.2016_FINAL.pdf
- Toeves, G.R., Karl, J.W., Taylor, J.J., Spurrier, C.S., Karl, M., Bobo, M.R., & Herrick, J.E. 2011. Consistent indicators and methods and a scalable sample design to meet assessment, inventory and monitoring needs across scales. *Rangelands* 33(4), 14-20.
- Trail, P.W., & Baptista, L.F. (1993). The impact of brown-headed cowbird parasitism on populations of the Nuttall's white-crowned sparrow. *Conservation Biology* 7(2), 309 - 315.
- Townsend, S.E., Hammerich, S., Halbur M. (2020). *Wildlife occupancy and trail use before and after a park opens to the public*. California Fish and Wildlife, Recreation Special Issue; 74-94; 2020. Retrieved from Scientific Journal ISSN: 2689-4203 (online): <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178955&inline>
- [UCMP] University of California Museum of Paleontology. [2019]. University of California Museum of Paleontology. Online collections. Retrieved on October 29, 2019 from <https://ucmpdb.berkeley.edu/>.
- US Census. (2010). 2010 Census. Retrieved from <https://www.census.gov/programs-surveys/decennial-census/decade.2010.html>
- US Census. (2017). 2017 Census. Retrieved from <https://www.census.gov/en.html>
- [USGS] United States Geological Survey. 2020. Preliminary Hazard Assessment of the CZU Lightning Complex (San Mateo and Santa Cruz Counties, CA). Retrieved on September 17, 2020 from https://landslides.usgs.gov/hazards/postfire_debrisflow/detail.php?objectid=299
- [USGS] United States Geological Survey. (n.d.). NAS – Nonindigenous aquatic species: *Potamopyrgus antipodarum*. Retrieved from <https://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=1008>
- [USFWS] U.S. Fish and Wildlife Service. (2002). *Recovery Plan for the California Red-legged Frog (Rana aurora draytonii)*. Portland, Oregon: U.S. Fish and Wildlife Service.

- Wang Y, Smith JA, Wilmers CC (2017) *Residential development alters behavior, movement, and energetics in an apex predator, the puma*. PLoS ONE 12(10): e0184687.
<https://doi.org/10.1371/journal.pone.0184687>
- Weber, G.E., & Allwardt A.O. (2001). The geology from Santa Cruz to Point Año Nuevo—
The San Gregorio fault zone and Pleistocene marine terraces. *Geology and Natural History of the
San Francisco Bay Area: A 2001 NAGT Field-Trip Guidebook*. Retrieved on February 5, 2020
from <https://pubs.usgs.gov/bul/b2188%202/b2188ch1.pdf>
- Weston M. A. & Stankowich T. (2013) Dogs as agents of disturbance. In M. E. Gompper, ed. *Free-
Ranging Dogs and Wildlife Conservation* (pp. 94-116). Oxford, United Kingdom: Oxford
University Press.
- Whittaker, D., & Knight, R.L. (1999). Understanding wildlife responses to humans. *Wildlife Society
Bulletin* 26, 312-317.
- Wilcove, D.S., McLellan, C.H., & Dobson, A.P. (1986). Habitat fragmentation in the temperate zone. in
M. E. Soule, editor. *Conservation biology. The science of scarcity and diversity* (pp. 237-256).
Sunderland, Massachusetts: Sinauer Associates.
- Wilmers CC, Wang Y, Nickel B, Houghtaling P, Shakeri Y, et al. (2013) *Scale Dependent Behavioral
Responses to Human Development by a Large Predator, the Puma*. PLoS ONE 8(4): e60590.
doi:10.1371/journal.pone.0060590



A Summary Profile

Selected Geographies:
Santa Cruz County, CA

Benchmark Geographies:
U.S.

Produced by
Headwaters Economics'
Economic Profile System (EPS)
<https://headwaterseconomics.org/eps>
January 22, 2020

Summary

Santa Cruz County, CA

About the Economic Profile System (EPS)

EPS is a free web tool created by Headwaters Economics to build customized socioeconomic reports of U.S. counties, states, and regions. Reports can be easily created to compare or aggregate different areas. EPS uses published statistics from federal data sources, including the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics.

The Bureau of Land Management and Forest Service have made significant financial and intellectual contributions to the operation and content of EPS.

See <https://headwaterseconomics.org/eps> for more information about the capabilities of EPS. For technical questions, contact Patty Gude at eps@headwaterseconomics.org or telephone 406-599-7425.



headwaterseconomics.org

Headwaters Economics is an independent, nonprofit research group. Our mission is to improve community development and land management decisions.



www.blm.gov

The Bureau of Land Management, an agency within the U.S. Department of Interior, administers 249.8 million acres of America's public lands, located primarily in western states. It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.



www.fs.fed.us

The Forest Service, an agency of the U.S. Department of Agriculture, administers national forests and grasslands encompassing 193 million acres. The Forest Service's mission is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

Summary

Santa Cruz County, CA

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Note to Users:

This is one of 14 reports that can be created and downloaded from EPS. Topics include land use, demographics, specific industry sectors, the role of non-labor income, the wildland-urban interface, the role of amenities in economic development, and payments to county governments from federal lands. The EPS reports are downloadable as Excel or PDF documents. See <https://headwaterseconomics.org/eps>.

Summary

Santa Cruz County, CA

Overview

	Santa Cruz County, CA	California	U.S.
Population, 2018	274,255	39,557,045	327,167,434

Trends

Population % change, 1970-2018	119.8%	97.6%	60.5%
Employment % change, 1970-2018	219.3%	167.4%	119.9%
Personal Income % change, 1970-2018	426.9%	291.2%	222.1%

Prosperity

Unemployment rate, 2018	4.9%	4.2%	3.9%
Average earnings per job, 2018 (2018 \$s)	\$60,944	\$73,815	\$62,321
Per capita income, 2018 (2018 \$s)	\$69,355	\$63,557	\$54,446

Economy

Non-Labor % of personal income, 2018	36.5%	36.2%	37.4%
Services % of employment, 2018	70.8%	75.3%	73.1%
Government % of employment, 2018	13.0%	11.6%	12.2%

Use Sectors[^]

Timber % of private employment, 2016	~0.2%	0.3%	0.6%
Mining % of private employment, 2016	~0.0%	0.1%	0.5%
Fossil fuels (oil, gas, & coal), 2016	~0.0%	~0.1%	0.4%
Other mining, 2016	~0.0%	0.1%	0.3%
Agriculture % of employment, 2018	4.4%	1.0%	1.3%
Travel & Tourism % of private emp., 2016	22.3%	16.8%	15.8%

Federal Land^{*}

Federal Land % total land ownership	2.1%	47.4%	27.5%
Forest Service %	0.0%	20.5%	8.4%
BLM %	2.0%	14.9%	10.5%
Park Service %	0.0%	7.6%	3.4%
Military %	0.0%	3.9%	1.1%
Other %	0.1%	0.5%	4.1%
Federal land % Type A ^{**}	100.0%	49.9%	37.6%
Federal payments % of gov. revenue, FY2012			

Development

Residential area % change, 2000-2010	-3.0%	15.5%	12.3%
Wildland-Urban Interface % developed, 2010	58.8%	17.2%	16.3%

Estimates for data that were not disclosed are indicated with tildes (~).

[^]Data for timber, mining, and travel and tourism-related are from County Business Patterns which excludes proprietors, and data for agriculture are from Bureau of Economic Analysis which includes proprietors.

* The land ownership data source and year vary depending on the selected geography. See following pages for specifics.

^{**} Federal public lands that are managed primarily for natural, cultural, and recreational features. These lands include National Parks and Preserves (NPS), Wilderness (NPS, FWS, FS, BLM), National Conservation Areas (BLM), National Monuments (NPS, FS, BLM), National Recreation Areas (NPS, FS, BLM), National Wild and Scenic Rivers (NPS), Waterfowl Production Areas (FWS), Wildlife Management Areas (FWS), Research Natural Areas (FS, BLM), Areas of Critical Environmental Concern (BLM), and National Wildlife Refuges (FWS).

Data Sources: Various; see following pages for specifics.

Find more reports like this at headwaterseconomics.org/eps

Data and Graphics | Page 4

Summary

Santa Cruz County, CA

Overview

What do we measure on this page?

Using summary statistics from topical EPS reports, this page compares socioeconomic indicators¹ of the selected area to a benchmark.

Trends: General indicators of economic well-being (population, employment, and real personal income) measured over time.

Prosperity: Common indicators of individual well-being or hardship (unemployment, average earnings per job, and per capita income).

Economy: Three significant sectors of the economy: non-labor income (e.g., government transfer payments, and investment and retirement income), services, and government employment.

Use Sectors: Components of the economy (commodity sectors including timber, mining and agriculture, and industries that include travel and tourism) that could be associated with the use of public lands.

Federal Land: The amount and type of federal land ownership, and the dependence of county governments on payments related to federal lands such as National Park Service (NPS), Forest Service (FS), Bureau of Land Management (BLM), and Fish and Wildlife Service (FWS).

Development: Residential development of private lands, including the wildland-urban interface. The wildland-urban interface data are available and reported only for the 11 western states and do not include Alaska and Hawaii.

Why is it important?

This report allows the user to compare a broad range of socioeconomic measurements. A user can refer to EPS topic-specific reports for more details. For example, when a county shows unusually high unemployment rates, a user may want to create an EPS Socioeconomic Measures report for that county. Or an EPS Timber report could be created for a county that shows a relatively high number of people employed in the timber industry.

This report uses information from the following EPS reports: Socioeconomic Measures, Demographics, Agriculture, Mining, Services, Tourism, Government, Non-Labor Income, Timber, Land Use, Public Land Amenities, Wildland-Urban Interface, and Federal Land Payments. Consult these reports directly for additional information at <https://headwaterseconomics.org/eps>.

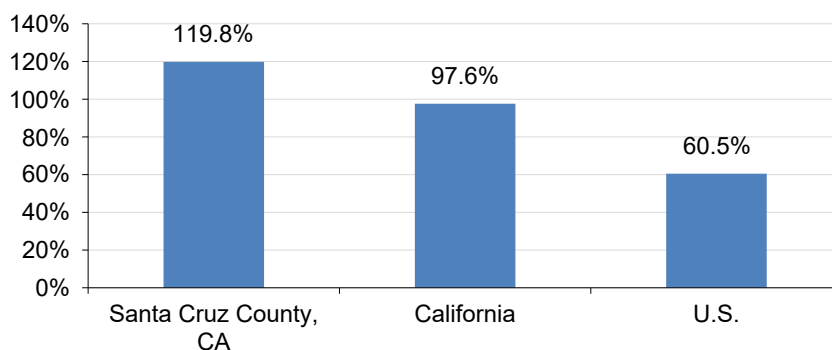
Summary

Santa Cruz County, CA

Population, Employment, and Personal Income

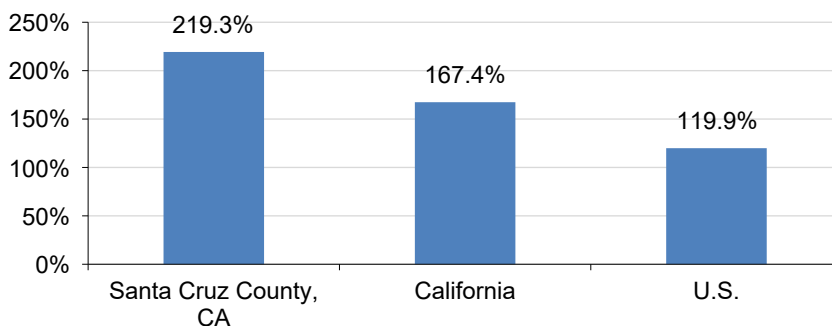
Population, Percent Change, 1970-2018

- Between 1970 and 2018, Santa Cruz County, CA had the largest percent change in population (119.8%), and the U.S. had the smallest (60.5%).



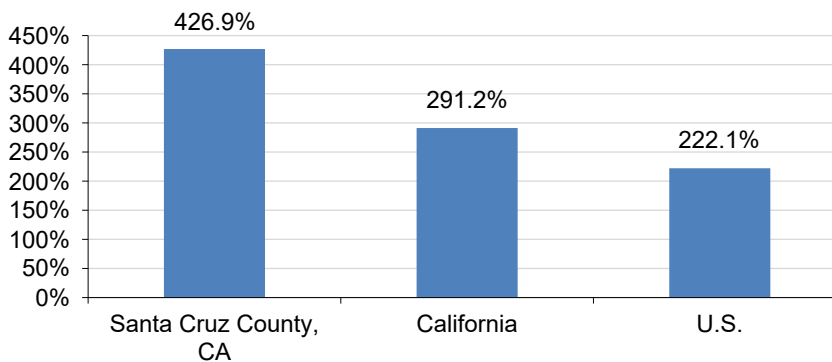
Employment, Percent Change, 1970-2018

- Between 1970 and 2018, Santa Cruz County, CA had the largest percent change in employment (219.3%), and the U.S. had the smallest (119.9%).



Personal Income, Percent Change, 1970-2018

- Between 1970 and 2018, Santa Cruz County, CA had the largest percent change in personal income (426.9%), and the U.S. had the smallest (222.1%).



Summary

Santa Cruz County, CA

Population, Employment, and Personal Income

What do we measure on this page?

This page describes percent change in population, employment, and real personal income.

The EPS Demographics report provides additional information on population dynamics, while the EPS Socioeconomic Measures report provides additional information on employment and personal income. See <https://headwaterseconomics.org/eps>.

The Bureau of Economic Analysis reports data either by place of residence or by place of work. Population and personal income data on this page are reported by place of residence, and employment data by place of work.²

Why is it important?

One measure of economic performance is whether a location is growing or declining. Standard measures of growth and decline are population, employment, and real personal income.

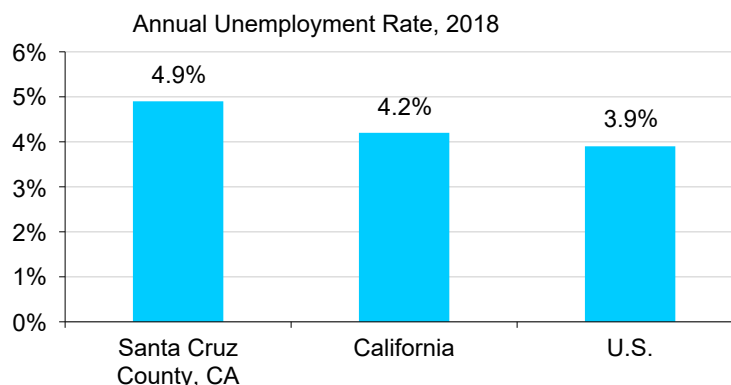
The information on this page helps users understand whether locations are growing or declining at different rates, and makes it easy to see discrepancies between changes in population, employment, and real personal income. If population and employment are growing faster than real personal income, for example, it may be worthwhile to research whether growth has been in low-wage industries and occupations. Alternatively, if personal income is growing faster than employment, it may be caused by growth in high-wage industries and occupations and/or non-labor income sources.

Summary

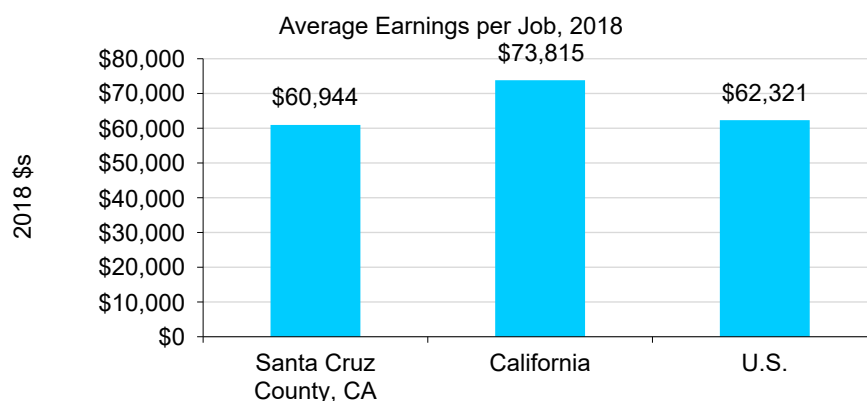
Santa Cruz County, CA

Unemployment, Earnings, and Per Capita Income

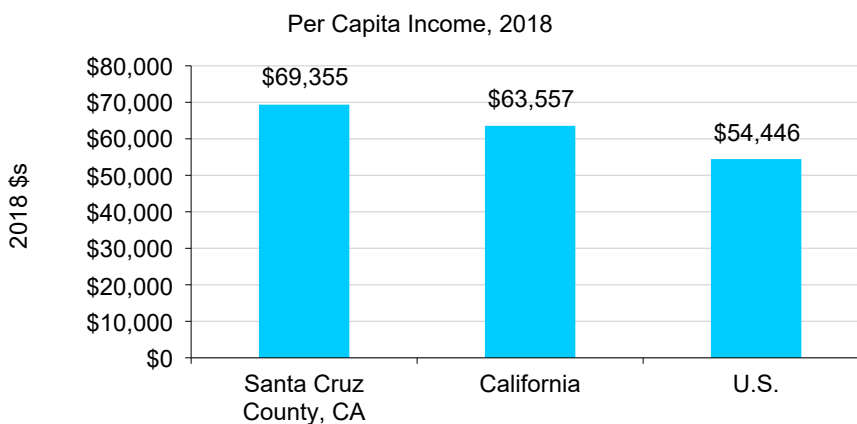
- In 2018, Santa Cruz County, CA had the highest unemployment rate (4.9%), and the U.S. had the lowest (3.9%).



- In 2018, California had the highest average earnings per job (\$73,815), and Santa Cruz County, CA had the lowest (\$60,944).



- In 2018, Santa Cruz County, CA had the highest per capita income (\$69,355), and the U.S. had the lowest (\$54,446).



Summary

Santa Cruz County, CA

Unemployment, Earnings, and Per Capita Income

What do we measure on this page?

This page describes three measures of individual prosperity: unemployment, average earnings per job, and per capita income.¹

Unemployment Rate: The number of people who are jobless, looking for jobs, and available for work divided by the labor force.³

Average Earnings per Job: Total earnings divided by total employment. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included.

Per Capita Income: Total personal income (from labor and non-labor sources) divided by total population.

Why is it important?

Statistics presented on this page are important indicators of economic well-being.

The annual unemployment rate is the number of people actively seeking but not finding work as a percent of the labor force. This figure can go up during national recessions and/or when more localized economies are affected by area downturns. Seasonal variations in unemployment can be viewed in the EPS Socioeconomic Measures report at <https://headwaterseconomics.org/eps>.

Average earnings per job is an indicator of the quality of local employment. A higher average earning per job indicates relatively more high-wage occupations.⁴ It can be useful to consider earnings against local cost of living indicators.

Per capita income is one of the most important measures of economic well-being. However, it can be misleading. Per capita income is total personal income divided by population. Because per capita income is calculated using total population and not the labor force, per capita income can be relatively low when a disproportionate number of children and/or elderly people are in the population. And because total personal income includes non-labor income sources, per capita income can be relatively high due to the presence of retirees and people with investment income. To investigate the impact of non-labor income sources on total personal income, create the EPS Non-Labor report at <https://headwaterseconomics.org/eps>.

To see how these measurements have changed over time, create an EPS Socioeconomic Measures report at <https://headwaterseconomics.org/eps>.

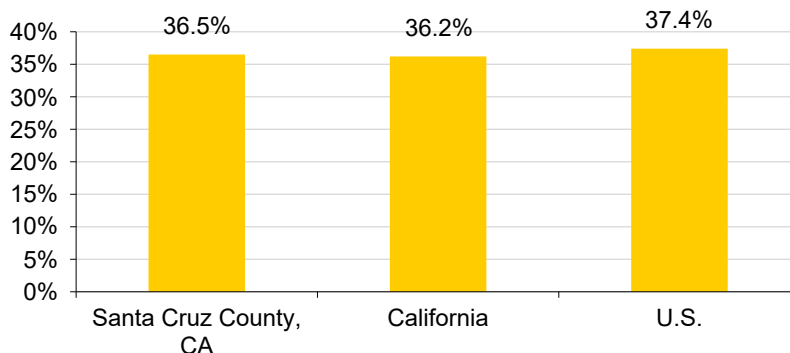
Summary

Santa Cruz County, CA

Non-Labor Income, Services, and Government

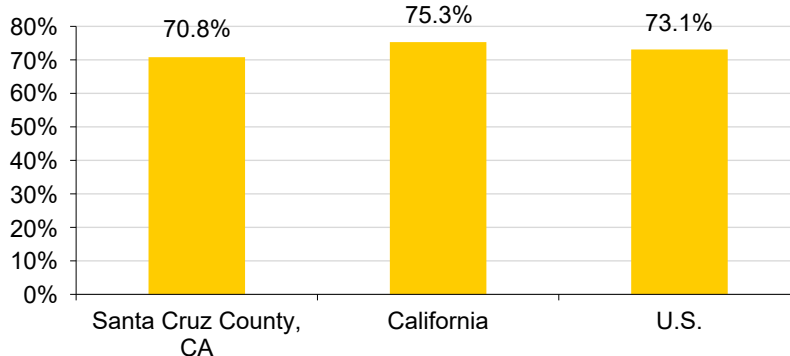
- In 2018, the U.S. had the largest percent of total personal income from non-labor income sources (37.4%), and California had the smallest (36.2%).

Non-Labor Income, Percent of Total Personal Income, 2018



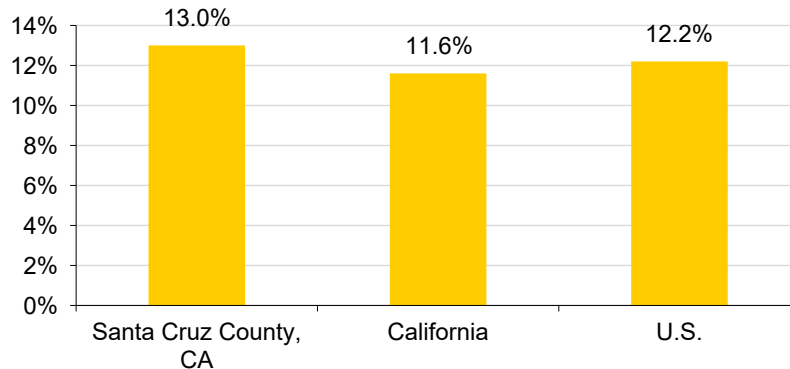
- In 2018, California had the largest percent of total jobs in services (75.3%), and Santa Cruz County, CA had the smallest (70.8%).

Services, Percent of Total Employment, 2018



- In 2018, Santa Cruz County, CA had the largest percent of total jobs in government (13%), and California had the smallest (11.6%).

Government, Percent of Total Employment, 2018



Summary

Santa Cruz County, CA

Non-Labor Income, Services, and Government

What do we measure on this page?

This page describes non-labor income and employment in services and government.¹

Non-Labor Income: Dividends, interest and rent (money earned from investments), and transfer payments (includes government retirement and disability insurance benefits, medical payments such as Medicare and Medicaid, income maintenance benefits, unemployment insurance benefits, etc.). Non-labor income is reported by place of residence.

Services: Employment in the following sectors: Utilities, Wholesale Trade, Retail Trade, Transportation & Warehousing, Information, Finance & Insurance, Real Estate & Rental & Leasing, Professional & Scientific & Tech., Management of Companies & Enterprises, Administrative & Support Services, Educational Services, Health Care & Social Assistance, Arts & Entertainment & Recreation, Accommodation & Food Services, and Other Services.

Government: Employment in federal, state, and local government agencies and government enterprises.

For more detailed information about the role of non-labor income, service industry employment, and government employment in the economy, create an EPS Non-Labor report, an EPS Services report, or an EPS Government report at <https://headwaterseconomics.org/eps>.

Why is it important?

In many counties, non-labor income (for example, retirement and investment income, government transfer payments) can be more than a third of all personal income. As the Baby Boomer generation retires, this source of income will continue to grow. A high dependence on non-labor income can indicate a location with an aging population and/or attractiveness to people with investment income. In some cases, it can also signal hardship, such as when there is a high dependence on Medicaid and income maintenance payments.

Nationally, services account for more than 95 percent of the growth in new jobs since 2000. Despite the strong growth of employment in services, the term "services" is often misunderstood. Services consist of a wide mix of jobs including high-wage, high-skilled occupations (e.g., doctors, engineers, software developers) and low-wage, low-skilled occupations (e.g., restaurant workers, tour bus operators). The service sector typically provides services, such as banking and education, rather than creating tangible objects. However, many service sectors such as utilities, engineering, and architecture are closely associated with goods-producing sectors.

Government can be a major employer in some locations, particularly in rural areas and locations with significant government facilities such as federal land management offices, military bases, prisons, or research facilities. Changes in government employment tend to track population trends. Local government often accounts for much of job growth in the government sector as additional services are demanded by a growing population.

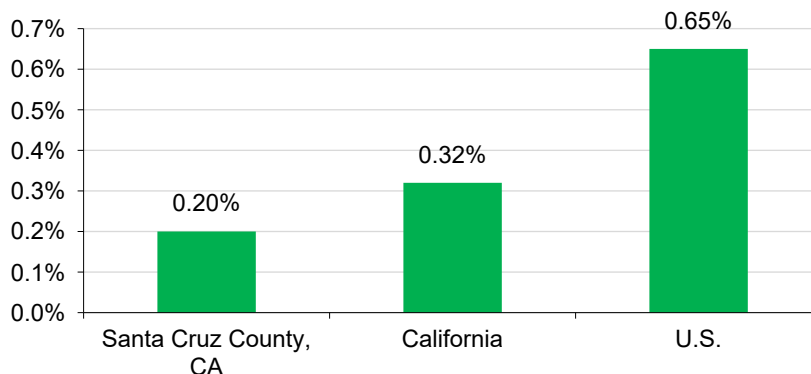
Summary

Santa Cruz County, CA

Employment in Commodity Sectors

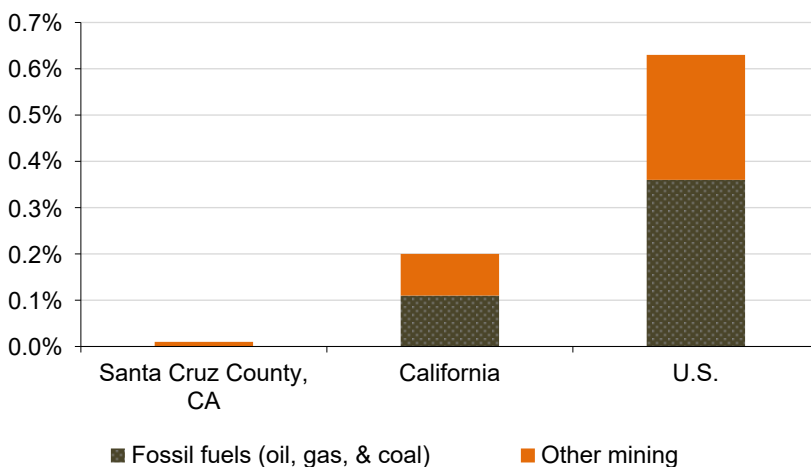
- In 2016, the U.S. had the largest percent of total jobs in timber (0.65%), and Santa Cruz County, CA had the smallest (0.2%).

Timber, Percent of Total Private Employment, 2016



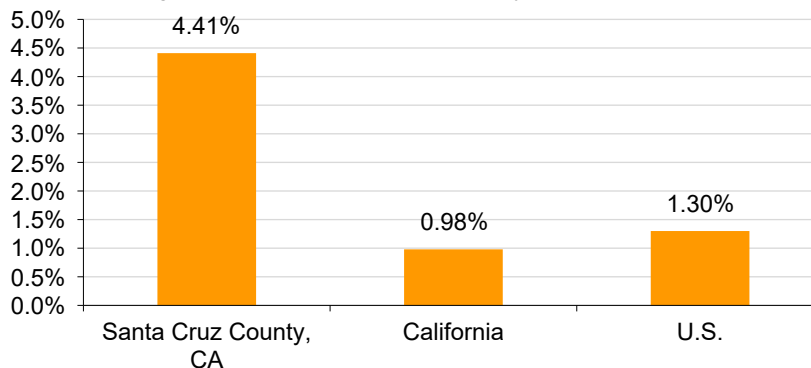
- In 2016, the U.S. had the largest percent of total jobs in mining of fossil fuels (0.36%), and Santa Cruz County, CA had the smallest (0%).
- In 2016, the U.S. had the largest percent of total jobs in mining unrelated to fossil fuels (0.27%), and Santa Cruz County, CA had the smallest (0.01%).

Mining, Percent of Total Private Employment, 2016



- In 2018, Santa Cruz County, CA had the largest percent of total jobs in agriculture (4.41%), and California had the smallest (0.98%).

Agriculture, Percent of Total Employment, 2018



Summary

Santa Cruz County, CA

Employment in Commodity Sectors

What do we measure on this page?

This page describes employment¹ in three commodity sectors: timber, mining (minerals, oil, gas, and coal), and agriculture. These are sectors of the economy that extract commodities from land (for example, timber harvesting, energy development, and grazing).

Timber: Employment associated with growing and harvesting trees, employment at sawmills and paper mills, and wood products manufacturing.

Mining: Employment associated with oil and gas extraction, coal mining, metals mining, and nonmetallic minerals mining.

Agriculture: Employment associated with all forms of agriculture, including farming and ranching.

County Business Patterns (CBP)⁵ are used in EPS reports as a data source for timber and mining because this data set has fewer data gaps compared to other sources.

The Bureau of Economic Analysis (BEA) is used as the data source for agriculture because CBP data do not include agriculture. However, the BEA data include proprietors, which are not included in CBP data. As a result, the data for agriculture are not strictly comparable to data for timber and mining. The latest year for each data source may vary due to different data release schedules.

For more detailed information about commodity sectors and for industry definitions, create an EPS Timber, Mining, or Agriculture report at <https://headwaterseconomics.org/eps>.

Why is it important?

Opportunities for commodity extraction can stimulate local employment.

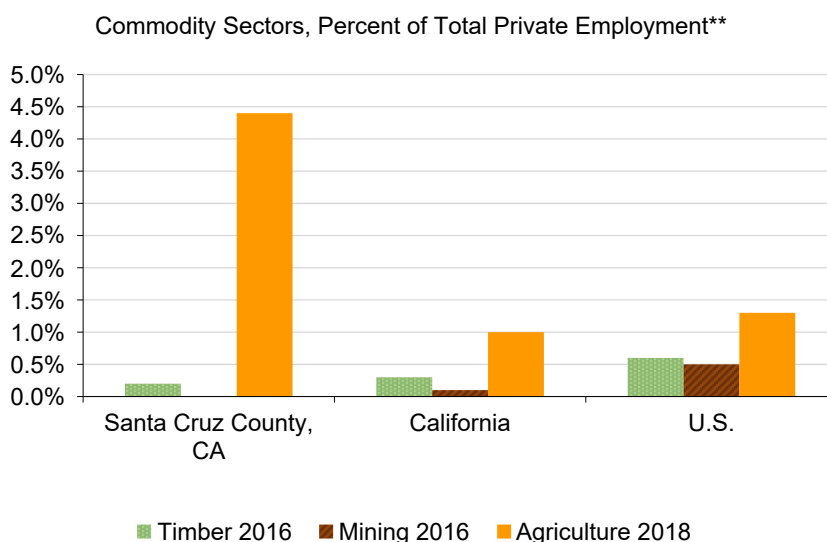
Timber industries, mining—including fossil fuel development (oil, natural gas, and coal)—and farming and ranching play important roles in some locations. Information on this page helps explain whether that is the case in the locations selected, and whether locations differ from one another.

Summary

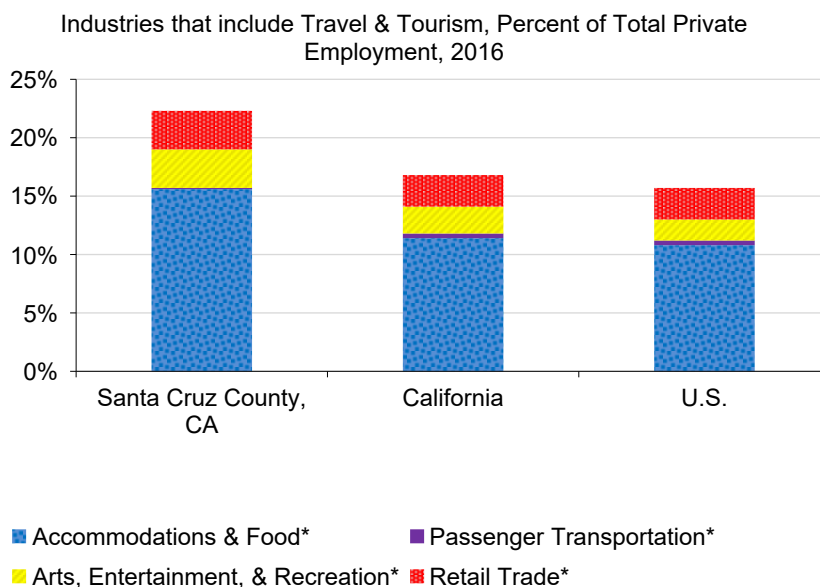
Santa Cruz County, CA

Employment in Commodities, Travel & Tourism

- Santa Cruz County, CA had the largest percent of total jobs in commodity sectors (4.6%), and California had the smallest (1.4%).
- Agriculture was the largest component of commodity sector employment (4.4% of total jobs) in the Santa Cruz County, CA, and mining was the smallest component (0% of total jobs).



- In 2016, Santa Cruz County, CA had the largest percent of total jobs in industries that include travel and tourism (22.3%), and the U.S. had the smallest (15.7%).
- In 2016, accommodations & food* was the largest component of travel and tourism-related employment (15.6% of total jobs) in Santa Cruz County, CA, and passenger transportation* was the smallest (0.1% of total jobs).



* Charted values do not represent the entirety of these sectors, rather their components typically related to travel & tourism.

** Data for timber and mining are from County Business Patterns which excludes proprietors, government, agriculture, and railroad. Data for agriculture are from Bureau of Economic Analysis. The latest year for each data source may vary due to different data release schedules.

Data Sources: U.S. Department of Commerce. 2019. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.; U.S. Department of Commerce. 2018. Census Bureau, County Business Patterns, Washington, D.C.

Find more reports like this at headwaterseconomics.org/eps

Summary

Santa Cruz County, CA

Employment in Commodities, Travel & Tourism

What do we measure on this page?

This page describes employment for commodity sectors and for industries that are associated with travel and tourism.

Commodity Sectors: Employment in timber, mining (including oil, gas, and coal), and agriculture.

Travel and Tourism: Employment in sectors that provide goods and services to visitors as well as to the local population. These industries are: Retail Trade, Passenger Transportation, Arts & Entertainment & Recreation, and Accommodation & Food Services. There is no single industrial classification for travel and tourism under the North American Industrial Classification System (NAICS). The exact proportion of jobs in these sectors attributable to expenditures by visitors, including business and pleasure travelers, is not known without additional research such as surveys.

County Business Patterns (CBP)⁵ are used in EPS reports as a data source for timber and mining because this data set has fewer data gaps¹ compared to other sources.

The Bureau of Economic Analysis (BEA) is used as a data source for agriculture because CBP data do not include agriculture. However, the BEA data include proprietors, which are not included in CBP data. As a result, the data for agriculture are not strictly comparable to data for timber and mining. The latest year for each data source may vary due to different data release schedules.

For more detailed information about commodity sectors and for industry definitions, create an EPS Timber, Mining, or Agriculture report. For more information about the tourism-related components of the economy, create an EPS Tourism report at <https://headwaterseconomics.org/eps>.

Why is it important?

Commodity extraction can stimulate local employment. It is important to understand the relative size of sectors to put the commodity-related economy into perspective. For example, decisions that permit (or restrict) timber, mining, and grazing activities have a higher chance of impacting a county with a high percentage of its employment in the commodity sectors.

Tourism and recreation can stimulate local employment. Communities can benefit directly from visitors who spend money in hotels, restaurants, ski resorts, gift shops, and elsewhere. Tourism can also help communities retain and attract capital and spur transitions to move diverse economies. This report can be used to understand whether travel-and tourism-related economic activity is present and whether there are differences between locations.

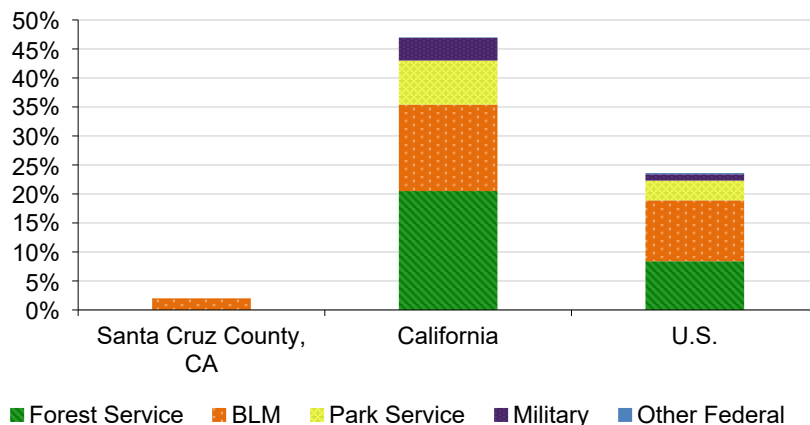
Summary

Santa Cruz County, CA

Federal Lands and Federal Land Payments

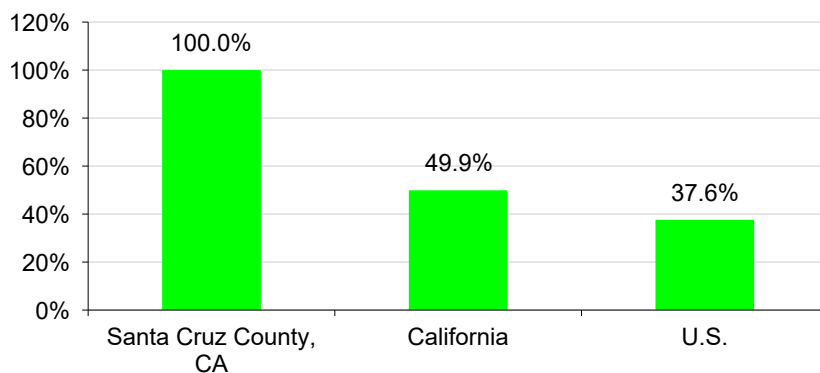
- California had the largest percent of total land area in federal ownership (47.1%), and Santa Cruz County, CA had the smallest (2%).
- BLM lands were the largest component of federal land ownership (2%) in Santa Cruz County, CA, and Forest Service lands were the smallest (0%).

Federal Land, Percent of Total Land Area



- Santa Cruz County, CA had the largest percent of federal lands in Type A (100%), and the U.S. had the smallest (37.6%).

Percent of Federal Lands, Type A



Federal Land Payments, Percent of Total General Government Revenue, 2012



Data Sources: NASA MODIS Land Cover Type Yearly L3 Global 1km MOD12Q1, 2006; U.S. Geological Survey, Gap Analysis Program. 2018. Protected Areas Database of the United States (PADUS) version 2.0; U.S. Department of Commerce. 2014. Census Bureau, Governments Division, Washington, D.C.

Summary

Santa Cruz County, CA

Federal Lands and Federal Land Payments

What do we measure on this page?

This page describes differences in the percent of federal land ownership by agency; the share of federal lands managed primarily for natural, cultural, and recreational features; and the percent of county revenue derived from payments related to federal lands.

Type A Federal Lands: Federal public lands that are managed primarily for natural, cultural, and recreational features. There can be exceptions (for example, oil and gas development within a National Monument area), but generally Type A lands are less likely to be used for commodity production than other federal land types. Type A lands include National Parks and Preserves (NPS), Wilderness (NPS, FWS, FS, BLM), National Conservation Areas (BLM), National Monuments (NPS, FS, BLM), National Recreation Areas (NPS, FS, BLM), National Wild and Scenic Rivers (NPS), Waterfowl Production Areas (FWS), Wildlife Management Areas (FWS), Research Natural Areas (FS, BLM), Areas of Critical Environmental Concern (BLM), and National Wildlife Refuges (FWS). These definitions of land classifications are not legal or agency-adopted classifications—they are only provided for comparative purposes.

NPS = National Park Service; FS = Forest Service; BLM = Bureau of Land Management; FWS = Fish & Wildlife Service.

For additional information about land ownership and development patterns, create an EPS Land Use report. The EPS Public Land Amenities report provides additional information about the role of environmental amenities in economic development; see <https://headwaterseconomics.org/eps>.

Federal Land Payments: Federal payments that compensate state and local governments for non-taxable federal lands within their borders. Payments are funded by federal appropriations (e.g., PILT), from receipts received by federal agencies from activities on federal public lands (e.g., timber, grazing, and minerals), and from other programs such as the Secure Rural Schools & Community Self-Determination Act.

For additional information about the importance of federal payments to counties, create an EPS Federal Land Payments report at <https://headwaterseconomics.org/eps>.

Why is it important?

Understanding the composition of land ownership and management in an area is important because actions on federal lands may affect the local economy, particularly when federal lands are a large portion of the land base.

Some Type A federal public lands prohibit most forms of commercial use and development. These lands include national parks, wilderness areas, and national monuments. Because these lands are managed primarily for their non-commercial values (i.e., scenery, wildlife, recreation), they potentially play a different economic role than public lands more commonly associated with commodity sectors.^{6, 7}

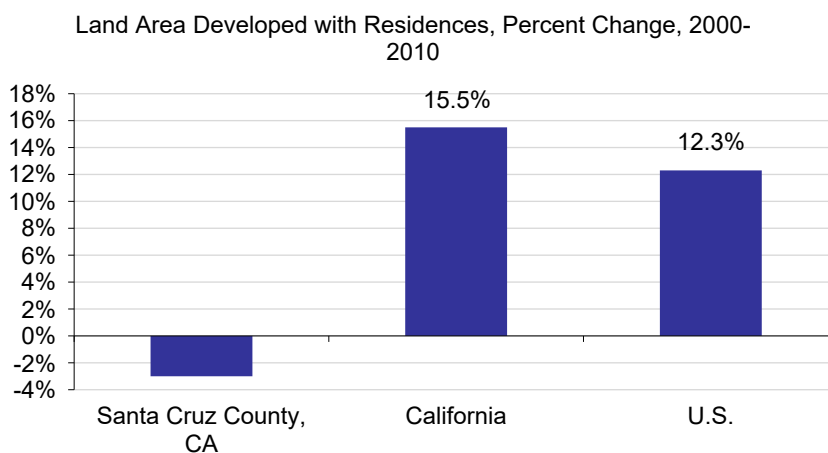
Locations with federal public lands receive government payments—for example, funding through Payments in Lieu of Taxes (PILT), the 25% Fund, or the Secure Rural Schools and Community Self-Determination Act. When these payments are a significant portion of the local county's budget, activities on public lands may affect the fiscal well-being of a county.⁸

Summary

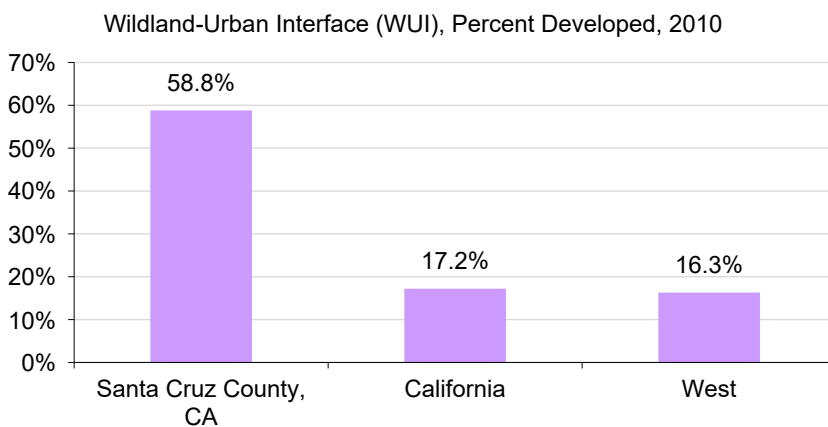
Santa Cruz County, CA

Development and the Wildland-Urban Interface

- Between 2000 and 2010, California had the largest percent change in residential land area developed (15.5%), and Santa Cruz County, CA had the smallest (-3%).



- In 2010, Santa Cruz County, CA had the largest proportion of the wildland-urban interface that is developed (58.8%), and the west had the smallest (16.3%).



Data Sources: Theobald, DM. 2013. Land use classes for ICLUS/SERGoM v2013. Unpublished report, Colorado State University; Gude, P.H., Rasker, R., and van den Noort, J. 2008. Potential for Future Development on Fire-Prone Lands. *Journal of Forestry* 106(4):198-205; U.S. Department of Commerce. 2011. TIGER/Line 2010 Census Blocks and 2010 Summary File 1, Washington, D.C.

Summary

Santa Cruz County, CA

Development and the Wildland-Urban Interface

What do we measure on this page?

This page describes residential development on private lands, and the proportion of the wildland-urban interface (WUI) that is developed.⁹ The EPS Land Use report provides additional information on land ownership, management, cover, and development: <https://headwaterseconomics.org/eps>.

This information is available only for the 11 western states and does not include Alaska and Hawaii.

Wildland-Urban Interface (WUI): Private forestlands that are within 500 meters of public forestlands. We use the threshold of 500 meters to identify the existing and potential WUI area because guidelines for the amount of defensible space necessary to protect homes from wildfire range from 40 to 500 meters around a home. We focus on adjacency to public forests because roughly 70 percent of western forests are publicly owned and because wildfire is a natural disturbance in many of these forests, creating a potential risk to adjacent private lands.¹⁰

Why is it important?

The conversion of open space and agricultural land to residential development has occurred at a rapid pace in many parts of the U.S. The popularity of exurban lot sizes in much of the country has exacerbated this trend. (Low-density development results in a larger area of land converted to residential development). The pattern of development can reflect a number of factors, including demographic trends, the increasingly "footloose" nature of economic activity, the availability and price of land, and preferences for homes on larger lots. Locations with a large percent change in the area of residential development often have experienced significant in-migration from more urbanized areas. Counties with a small percent change either experienced little growth or were already highly urbanized in 2000.

Development of homes adjacent to fire-prone federal public lands poses several challenges including the rising cost of protecting homes from wildfires; increased danger to wildland firefighters; and the consumption of funds that might otherwise be used for restoration, recreation, research, and other activities. When protecting homes is a priority, agencies are unable to allow otherwise beneficial fires to burn, even those that could reduce fuel loads.

Summary

Santa Cruz County, CA

Data Sources & Methods

This EPS Summary report uses national statistics from public government sources. All data used in EPS can be readily verified with the original sources:

- **County Business Patterns**

Census Bureau, U.S. Department of Commerce
<https://www.census.gov/programs-surveys/cbp.html>
Contacts
<https://www.census.gov/about/contact-us.html>

The EPS Summary report also uses data derived from Geographic Information Systems (GIS) to show more accurate statistics for land ownership:

- **Regional Economic Information Data**

Bureau of Economic Analysis, U.S. Department of Commerce
https://www.bea.gov/iTable/index_regional.cfm
Contacts
<https://www.bea.gov/contacts/search.htm>

- **TIGER/Line County Boundaries**

Bureau of the Census, U.S. Department of Commerce
<https://www.census.gov/geo/maps-data/data/tiger.html>

- **Local Area Unemployment Statistics**

Bureau of Labor Statistics, U.S. Department of Labor
<https://www.bls.gov/lau/>
Contacts
<https://www.bls.gov/bls/contact.htm>

- **Protected Areas Database**

U.S. Geological Survey, Gap Analysis Program
<https://gapanalysis.usgs.gov/padus/>

EPS core approaches

EPS is designed to focus on long-term trends across a range of important measures. Trend analysis provides a more comprehensive view of changes than spot data for select years. We encourage users to focus on major trends rather than absolute numbers. EPS displays detailed industry-level data to show changes in the composition of the economy over time and the mix of industries at points in time. EPS employs cross-sectional benchmarking – comparing smaller areas such as counties to larger regions, states, and the nation – to give a sense of relative performance. EPS allows users to aggregate data for multiple locations to allow for more sophisticated cross-sectional comparisons.

Adjusting dollar figures for inflation

Because a dollar in the past was worth more than a dollar today, data reported in current dollar terms should be adjusted for inflation. The U.S. Department of Commerce reports personal income figures in terms of current dollars. All income data in EPS are adjusted to real (or constant) dollars using the Consumer Price Index. Figures are adjusted to the latest date for which the annual Consumer Price Index is available.

Data gaps and estimation

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses supplemental data from the U.S. Department of Commerce to estimate these data gaps. These are indicated with tildes (~) in tables. Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at <https://headwaterseconomics.org/eps>.

Summary

Santa Cruz County, CA

Endnotes

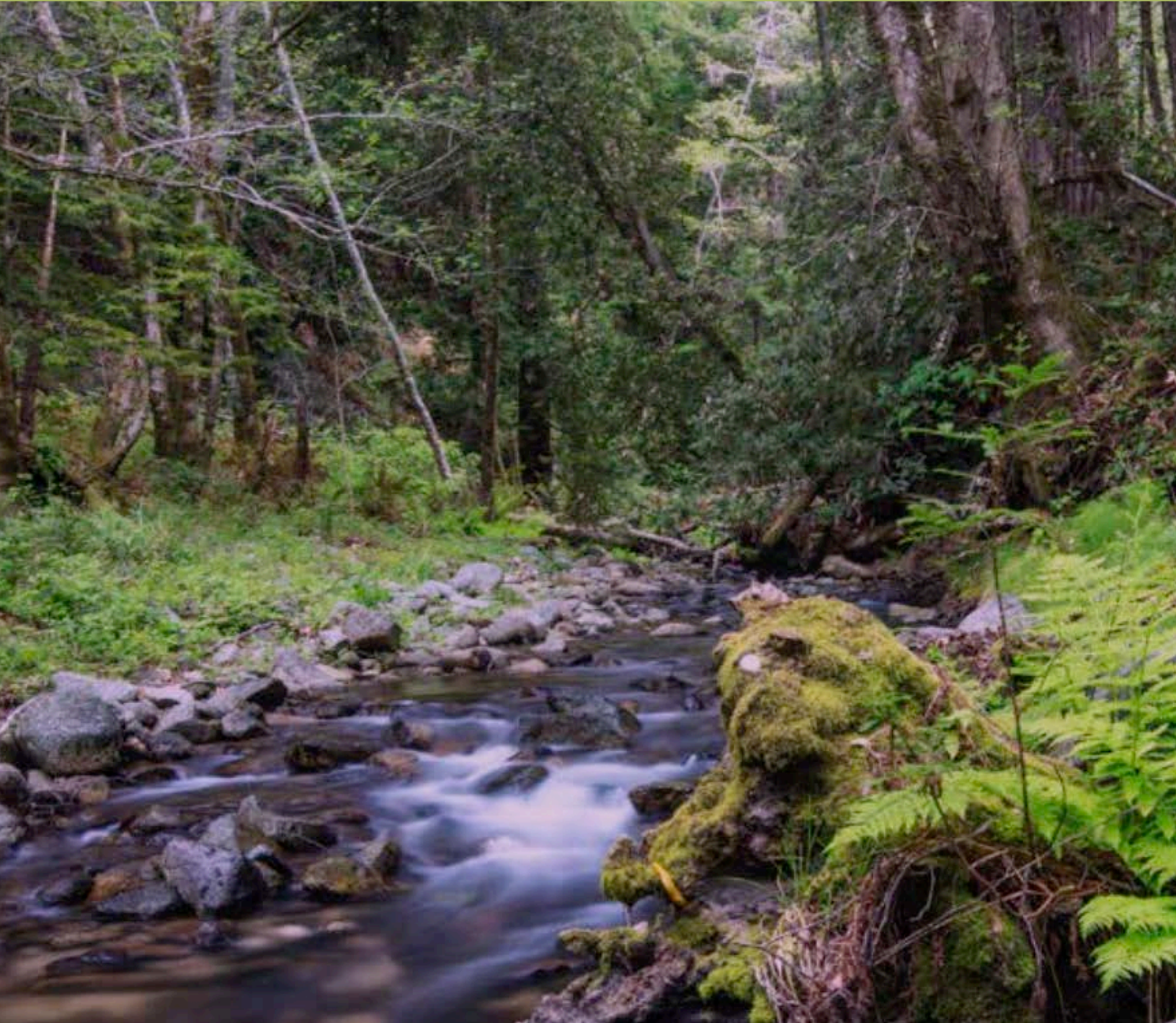
- 1 - Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics estimates these data gaps. Estimates are indicated with tildes (~). Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at <https://headwaterseconomics.org/eps>.
- 2 - For details on Bureau of Economic Analysis terms, see: <https://bea.gov/regional/definitions>.
- 3 - For more information on unemployment, see the Bureau of Labor Statistics resources on this topic at <https://www.bls.gov/bls/unemployment.htm>.
- 4 - The Monthly Labor Review Online, published by the Bureau of Labor statistics, addresses earnings and wages by industry, sex, and educational achievement. Search at <https://www.bls.gov/mlr/>.
- 5- Data from County Business Patterns includes both full- and part-time employment. However, CBP data do not include employment in government, agriculture, railroads, or the self-employed and, as a result, undercount the size of industry sectors. Also, CBP data are based on mid-March employment and do not take into account seasonal fluctuations. For these reasons, the data are most useful for showing long-term trends, displaying differences between locations, and showing relationships between sectors over time.
- 6 - For examples of literature on the economic role of environmental amenities, see: Booth DE. 1999. Spatial Patterns in the Economic Development of the Mountain West. *Growth and Change* 30(3):384-405; Duffy-Deno KT. 1998. The Effect of Federal Wilderness on County Growth in the Intermountain Western United States. *Journal of Regional Science* 38(1):109-136; Lorah P and Southwick R. 2003. Environmental Protection, Population Change, and Economic Development in the Rural Western United States. *Population and Environment* 24(3):255-272; McGranahan DA. 1999. Natural Amenities Drive Rural Population Change. USDA Economic Research Service, Agricultural Economic Report No. 781. https://www.ers.usda.gov/webdocs/publications/41047/13201_aer781.pdf?v=42061; Rasker R. 2006. An Exploration Into the Economic Impact of Industrial Development Versus Conservation on Western Public Lands. *Society & Natural Resources* 19(3):191-207; Rudzitis G, Johansen HE. 1991. How Important is Wilderness? Results from a United States Survey. *Environmental Management* 15(2):227-233.
- 7- A bibliography of studies documenting the economic role of public lands can be found here: https://headwaterseconomics.org/wp-content/uploads/Annotated_Bib_Value_Public_Lands.pdf.
- 8- An online data visualization and map showing the history of federal land payments to counties can be seen here: <https://headwaterseconomics.org/dataviz/county-payments/>
- 9- For resources related to the wildland-urban interface (WUI), including planning tools and related solutions, see <https://headwaterseconomics.org/wildfire/>.
- 10- For a description of the methods used to define and measure the wildland-urban interface, see: Gude P, Rasker R, and van den Noort J. 2008. Potential for Future Development on Fire-Prone Lands. *Journal of Forestry* 106(4):198-205.



U.S. Department of the Interior
Bureau of Land Management

Cotoni-Coast Dairies

California Coastal National Monument



Draft Resource Management Plan Amendment & Environmental Assessment
Public Comments Report | June 2020

**U.S. Department of the Interior
Bureau of Land Management**



**Draft Resource Management Plan Amendment
&
Environmental Assessment**

**Cotoni-Coast Dairies
California Coastal National Monument**

Public Comment Summary Report

Prepared by the Consensus Building Institute

June 2020

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SECTION 1 | OVERVIEW OF PUBLIC COMMENT REPORT

1.1. INTRODUCTION TO THIS REPORT

This report contains a summary of the public comments (in the form of letters, emails, electronic submissions, and comment forms) received by the Central Coast Field Office from agencies, organizations, and individuals on the Cotoni-Coast Dairies (C-CD) Draft Resource Management Plan Amendment (RMPA) and Environmental Assessment (EA). Pursuant to 43 CFR 46.305, the BLM considered the public comments and revised the Proposed RMPA and associated environmental assessment accordingly. Although the public comments on the draft were voluminous, there are many major themes that were identified repeatedly among the interested parties. Whether or not these comments were thought to merit individual discussion, the BLM responded by modifying the proposed action, improving the impact analyses, making factual corrections, or indicating those circumstances which would trigger additional NEPA review.

This report is organized as follows:

- **[Section 1 | Overview of the Comments](#)**
This section describes the organization of this document; summary of the comments; and how to use this document.
- **[Section 2 | General Comment Topics](#)**
This section presents a summary of general comments received by the BLM on the Draft RMPA/EA. Similar comments have been collected into topic areas for which a single response will be provided.
- **[Section 3 | Agency and Organization Comments & Form Letters](#)**
This section provides a list of the commenters by name of the agency/organization and a codified identifier for each commenting entity. Each entity's comments are summarized and grouped by topics. This section also includes example from letters submitted by numerous entities.
- **[Section 4 | Individual Commenters](#)**
This section lists the names of individuals not associated with a particular agency, organization, or form letter. Individuals who indicated they are affiliated with a specific business or company are noted. While individuals often commented on multiple topics, this section groups individuals by the primary issue mentioned in the comments.

1.2. SUMMARY OF COMMENTS RECEIVED

During the public comment period (which lasted from February 14 to April 3, 2020), 862 comment submissions were received from individuals, agencies, and organizations. The commenters included federal and state officials; public interest groups; and private citizens. Public comments on the Draft RMPA/EA were assessed both individually and collectively by the BLM. Several of these were letters and/or emails containing identical text that had been suggested by environmental groups, neighborhood associations, recreation organizations, and agricultural groups. Each comment letter typically contained multiple individual comments on one or more of the topics addressed in the Draft RMPA/EA.

The following sections include a summary of the comments received during the public comment period for the Draft RMPA/EA in order to provide an overview of the concerns expressed during the comment period and to demonstrate the BLM decision-makers are aware of these concerns. All the comments received during the public comment period for the C-CD Draft RMPA/EA are included in the administrative record for the C-CD Draft RMPA/EA and are available for review upon request to the BLM's Central Coast Field Office.

1.3. HOW TO FIND A SPECIFIC COMMENT

A numeric identifier was used to develop the "Comment Code" for each comment letter, form, electronic submission and/or email received by the Central Coast Field Office. Each commenting entity has a unique commenter code. For the purpose of this document, multiple comments received by the same agency/organization are combined under the same commenter code.

A legend of "Commenter Codes" used to track comments on the C-CD Draft RMPA/EA is provided below:

Commenter Code Legend

AG-*NAME*	Agency Comment
ORG-*NAME*	Organization (or Club) Comment
FORM_*NAME*	Form Letter
IND-	Individual Commenter

The BLM has made a good faith effort to interpret names and comments that were hand-written on comment forms and letters.

SECTION 2 | GENERAL COMMENTS

This section provides a summary of comments received on general or recurrent issues. These comments are aggregated by topic. The comment summaries provide a brief overview of the comments for the reader's convenience in reviewing the responses; comment summaries may include one or more example comments to help summarize the issue. The comment summaries are not intended to provide a complete representation or interpretation of the comment's meaning.

The comment topics (or major themes) are listed briefly below and are provided in full in the remainder of Section 2:

2.1 Non-NEPA/BLM Issues

- 2.1.1 Outside BLM Jurisdiction, Authority, or Scope
- 2.1.2 Addressed through Policy, Regulations, or Administrative Actions
- 2.1.3 Issues Considered, but Not Analyzed in Detail
- 2.1.4 Cited References
- 2.1.5 General Comments, Non-Substantive

2.2 NEPA Process

- 2.2.1 Level of NEPA Documentation
- 2.2.2 Stakeholder Consultation and Public Involvement
- 2.2.3 Informed Decision

2.3 Purpose and Need

- 2.3.1 Statutes, Policies, and Regulations

2.4 Management Alternatives

- 2.4.1 Range of Alternatives
- 2.4.2 Preferred Alternative
- 2.4.3 Alternatives Considered But Not Analyzed in Detail

2.5 Alternatives: Menu of Options for Preferred Alternative

- 2.5.1 Land Uses
- 2.5.2 Cultural and Heritage Resources
- 2.5.3 Fire and Fuels
- 2.5.4 Vegetation and Management
- 2.5.5 Biological Resources: Habitat, Wildlife, and Special Status Species
- 2.5.6 Services and Facilities
- 2.5.7 Recreation
- 2.5.8 Hunting / Shooting

2.6 Environmental Analysis

- 2.6.1 Analysis and Uncertainty
- 2.6.2 Existing Conditions and Environmental Consequences
- 2.6.3 Cumulative Effects

2.1. NON-NEPA/BLM ISSUES

Many comments raised concerns that are not environmental issues within the context of the National Environmental Policy Act (NEPA) or are outside the scope of the C-CD RMPA/EA because they are not under the authority or within the jurisdiction of the BLM.

2.1.1 Outside BLM Jurisdiction, Authority, or Scope

A. Leaving Property As-Is

Multiple comments requested that the BLM leave the property as-is, citing concerns including the need to protect and preserve remaining open lands and potential impacts to neighboring communities and local public services.

B. Outside BLM Jurisdiction or Authority

The BLM received comments requesting that the BLM take management actions that fall under the authority of other entities.

2.1.2 Addressed through Policy, Regulations, or Administrative Actions

A. Planning vs. Implementation-Level Decisions

Several comments requested the BLM make site- or project-specific decisions or management actions. While the RMPA/EA does include some project-specific decisions related to recreation and travel and transportation management (e.g. the location of trailheads and trails), these decisions are typically not included within an RMPA.

2.1.3 Issues Considered, but Not Analyzed in Detail

A. Resource Inventories

Several comments acknowledged the lack of information or data related to robust resource inventories on the C-CD property at the time of developing the Draft RMPA/EA; however, commenters frequently expressed concerns about the implications if planning decisions and management were to move forward without completed inventories and surveys.

***ORG-CLF:** CLF is concerned that the agency intends to limit the RMP development process, thereby not doing their due diligence to assess, document, and disclose necessary information. BLM must adhere to their own guidance and NEPA in developing an RMP, which includes analysis and inventory of objects and values and “rigorously explor[ing] and objectively evaluat[ing]” a range of alternatives*

B. Revenue and Expenditures

Comments frequently expressed a need to identify reliable funding sources for implementing the RMPA that would ensure adequate and sustainable management of the C-CD property.

***ORG-DF:** The RMPA fails to explain how these services [e.g., monitoring, enforcement, maintenance, etc.] could be provided given current funding and capacity.*

***ORG-FONC:** [The Preferred Alternative should include:] Access and usage not to exceed sufficiency of funding and personnel to fully implement, monitor, and enforce compliance with the RMPA.*

C. Patrol/Law Enforcement

ORG-DNCA: The RMPA/EA does not adequately address the local impacts of the proposed alternatives on fire readiness and response, other emergency services, or security of adjacent landowners and the Davenport community.... While these may be administrative actions that do not fall under the purview of "planning activities," the North Coast community needs a better understanding of what they are to be reassured that activities contemplated in the RMPA do not pose undue burdens on local citizens.

D. Cumulative Impacts on Neighboring Properties

Several commenters requested the BLM to thoroughly analyze and discuss impacts (including cumulative impacts) of proposed C-CD development activities on adjacent properties and projects.

2.1.4 Cited References

A. 2004 Coast Dairies Long Term Resource Protection and Access Plan

The BLM received comments that indicated some of the RMPA/EA decisions are based on outdated information in the 2004 plan.

There were also requests for the BLM to address potential conflicting information.

ORG-DNCA: [P]lease address how the RMPA will follow the guidance of the Coast Dairies Long Term Resource Protection and Access Plan particularly the "Goals and Standards" identified in Chapter V, the "Adaptive Management" in Chapter VIII, and the "List of Laws, Ordinances, Regulations, and Standards" in Appendix 9. How will inherent conflicts between the two plans be resolved?

2.1.5 General Comments, Non-Substantive

A. Document Format and Terminology

The BLM received comments conveying challenges to assimilate and provide germane comments due to the document format and length.

B. Non-Environmental Issues or Non-Substantive Comments

The BLM received multiple comments that were unrelated to environmental issues or impacts and/or lacked substantive input to inform the draft RMPA/EA review (e.g., expressed support or opposition for a particular alternative without additional discussion).

2.2. NEPA PROCESS

2.2.1 Level of NEPA Documentation

A. EIS Warranted or Revised EA Supporting FONSI Decision

Multiple commenters were of the opinion that an EA is not the appropriate level of NEPA documentation, and that an environmental impact Statement (EIS) should be prepared. Several commenters indicated that the RMPA should undergo the more robust EIS process, or the EA would require substantial revisions (e.g., robust resource inventory surveys, cumulative impact analyses,

well-defined preferred alternative, and mitigation measures) to sufficiently support a FONSI decision.

ORG-RBDA: *...BLM should identify a Preferred Alternative that complies with all applicable state and federal laws and policies, conduct a full Environmental Impact Study before proceeding with any public access, and clearly spell out the mitigations it intends (and has the resources) to implement to reduce all impacts to an insignificant level.*

AG-COUNTY_SCPD: *The analysis in Chapter 4 would be much clearer and understandable if the impact analysis and conclusions were organized and summarized in a table or separate section. There needs to be a detailed explanation and presentation of how the adverse effects described in Chapter 4 would be avoided, minimized, or mitigated to a less than significant level. For each adverse effect identified in Chapter 4 the analysis needs to identify a project design feature(s) or use restrictions that avoid, minimize or mitigate the adverse effect. This is a critical step needed to support either a FONSI or a requirement for an environmental impact statement or a supplement to the existing environmental impact statement.*

2.2.2 Stakeholder Consultation and Public Involvement

A. Public Comment Period

Several comments requested more time for the public comment period for at least 30 days, particularly due to the impacts of COVID-19.

B. BLM Engagement

Multiple comments expressed appreciation for the BLM staff's effort and public involvement process through the scoping period.

The BLM also received comments requesting the BLM provide more details on public involvement through the next stages of ongoing management planning and implementation (e.g., reviewing progress and applying adaptive management measures).

AG-COUNTY_SCPD: *Appendix C contains a "General Monitoring Plan" which provides very general information on monitoring and adaptive management.... The RMPA Appendix C General Monitoring Plan should provide more specific information about this process. Are the five-year updates an internal, administrative process, or are they intended to include a publicly available report with opportunity for public participation and comment?*

C. Coordination with Others

Commenters frequently emphasized the importance of consultation and coordination with related projects and planning efforts.

AG-CCC: *[T]hese nearby projects and planning efforts will collectively increase the volume of visitors to the north coast, as will the RMPA, and it is important to ensure that all of these projects are designed in collaboration with one another, and that the connectivity or potential connectivity between the projects and the properties is clearly defined. At a minimum, planned physical improvements need to be coordinated, but perhaps most importantly, the final RMPA*

will need to identify appropriate and complementary management provisions that can be implemented to ensure that use occurs in a manner that is sustainable and protective of coastal resources throughout the north coast area. The RMPA needs to clearly and explicitly account for this broader context, and include enforceable provisions that can ensure that its implementation will not overwhelm the resource, including the need for adequate funding to fully support integrated use, maintenance, and management, both initially and going into the future, as the surrounding context changes as these other projects and planning efforts come to fruition.

2.2.3 Informed Decision

A. Additional Studies Needed

Commenters shared concerns that additional studies (e.g., resource inventories and cumulative impact analyses) are needed before an informed decision can be made to move forward with the RMPA. Commenters expressed concerns with the BLM deferring analysis of impacts of the proposed management uses until after selecting a specific mix of uses and trail locations.

ORG-RBDA: [The ORG-FONC Comment Letter] contains a number of comments by highly-qualified experts in various fields relevant to management of Cotoni-Coast Dairies in a manner consistent with the above- cited legal requirements. Those experts conclude that your Environmental Assessment is inadequate to the goal of informed decision-making and public participation, but rather gives only cloudy assurances that potential impacts will be addressed.

2.3. PURPOSE AND NEED

2.3.1 Statutes, Policies, and Restrictions

A. Management Requirements

The BLM received comments expressing concerns that the draft RMPA/EA does not align with the intent and stipulations outlined in the FLPMA and Presidential Proclamation 9563 to support public access while ensuring protection of the objects and values identified in the Presidential Proclamation (e.g., sensitive habitats, special status species, etc.). Commenters stated that although the RMPA/EA indicates that public access will have environmental impacts, it does not adequately provide assurances for protecting the property's objects and values. In addition to the Presidential Proclamation, commenters cited other laws, policies, and management restrictions (e.g., Omnibus Public Lands Act, Secretarial Order 3308, BLM policy manuals, and the property deed restrictions) that indicate the RMPA/EA should prioritize conservation over public access.

ORG-DF: [Although] adding the C-CD property to the California Coastal National Monument necessitates public access, the original monument proclamation named first and foremost the protection of the "biological treasures" within the Monument. We believe that this perspective should remain paramount and that expanded access to the property should pose minimal impact to these treasures.

ORG-SF: Numerous statutes, policies and legal requirements dictate how this unit is supposed to be managed. They consistently provide clarity that the ecological, archeological and cultural values are paramount and must be preserved.... The Omnibus Public Lands Act - This statute makes clear that units of the system must be managed to a higher conservation standard than other lands managed by the BLM and further supports the argument that recreational activities

can occur on national monument lands only when there is adequate protection for the ecological, archeological and cultural values.... Policies of the Department of the Interior and Bureau of Land Management - The Secretarial Order, 15-Year Strategy and Policy Manuals make clear that agency policy prioritizes conservation over other uses, including recreation, within the National Conservation Lands.

2.4. MANAGEMENT ALTERNATIVES

This section 2.4 briefly describes recurrent themes about the RMPA alternatives in general. The following section 2.5 provides more specific public input related to the menu of options (e.g., vegetation management options and potential access points).

2.4.1 Range of Alternatives

A. Alternative A / No Action Alternative

Multiple commenters supported Alternative A because it offered the greatest protection and preservation of natural resources and habitats; however, many of the same commenters expressed concern the minimal management approach does not ensure long-term stewardship of the property. Several commenters therefore suggested the Preferred Alternative incorporate additional management measures (e.g., comprehensive grazing and vegetation management similar to Alternatives B and C) and adaptive management into the land use plan.

ORG-CNPS-SC: ...supports Alternative A along with a planned grazing program to maintain the grasslands of the Cotoni-Coast Dairies property. ...provides the greatest protection and preservation of natural resources and habitats. Land use plans must include specific, measurable goals and objectives to effect desired outcomes. We support adaptive management to enable long-term stewardship of the property.

Other commenters conveyed that Alternative A does not offer sufficient public access opportunities. Several commenters also had concerns with particular components of the public access design (e.g., support or concerns with a particular proposed access point or trail route).

AG-CCC: As a general point, Alternative A would result in underutilization of the public recreational access potential of the nearly 6,000-acre BLM property, thereby not appropriately maximizing public recreational access opportunities as required by the Coastal Act.... Alternative A does not appear consistent with the Coastal Act, nor does it conform with the terms and conditions of CDP 3-11-035. Thus, it does not appear that Alternative A is an appropriate alternative to pursue for long-term use and management of the property.

The BLM received several comments stating that Alternative A does not qualify as a No Action Alternative and is therefore noncompliant with NEPA. Commenters called for the BLM to analyze the status quo as the No Action Alternative.

B. Alternative B

Several commenters indicated Alternative B offered a suitable balance between Alternative A, which includes the least amount of public access, and Alternative C, which offers the most public access

opportunities. Overall, comments indicated support for the BLM's proposed phased approach to expanding and developing recreational opportunities and access.

AG-COUNTY_SCPD: *Alternative B, or a similar amount of parking and trail development, provides a balance between recreation and wildlife habitat protection.*

ORG-SBIS: *[W]e support the lower trail mileage proposed in Alternative B unless or until BLM can demonstrate it has the capacity to manage a more extensive trail network. There is no need to impact cultural or natural resources with ill-conceived or unnecessary trails.*

Concerns and support related to components shared with either Alternative A or Alternative C frequently carried over for Alternative B. For example, several commenters valued the additional level of fuels reduction, vegetation, and invasive species management in Alternatives B and C.

ORG-SRL: *Regarding Alternative B, similar to Alternative A, the exclusion of equestrian use along the section of trail in RMZ#1 does not align with the proposed trail use in the SVR public access plan.*

Common concerns with Alternative B often related to allowing recreational hunting with habitat/wildlife enhancements and broadcast spraying of herbicides.

C. Alternative C

Multiple commenters supported Alternative C because it offered the highest level of public access among the three alternatives. Similar to Alternative B, commenters appreciated the additional management activities to protect communities and the natural environment from major threats like hazardous wildfires and the spread of invasive species.

As with Alternative B, comments overall supported the BLM's proposed phased approach for providing public access. However, several commenters still felt the level of public access and activities would be too harmful (e.g., habitat damage, water quality degradation, community disturbance, etc.).

The increased proposed recreational activities in Alternative C corresponded with increased concerns about the potential negative environmental, social, and economic impacts. For instance, several commenters indicated they were fine with dogs on leash (as described in Alternatives A and B), but were opposed to off-leash areas (as described in Alternative C). Similar to Alternative B, common concerns with Alternative C often related to allowing recreational hunting with habitat/wildlife enhancements and broadcast spraying of herbicides.

ORG-CAMTB: *[O]f the three proposed alternatives, only Alternative C provides a minimum viable mileage of trails to provide for a meaningful user experience. We believe that there are additional opportunities to increase trail access and reconfigure the trail layout to be more conducive to public enjoyment while still meeting management goals.*

ORG-DF: *[P]roceeding with the scope and scale of development in Alternative C could cause overuse of the property in terms of human access and the extent of disturbance to wildlife, and it*

should be rejected outright.... In short, despite best intentions, people will push their use opportunities beyond enforceable limits, and this creep of human overuse will exceed the capacity of managers to regulate.

2.4.2 Preferred Alternative

A. Preferred Alternative Missing

The BLM received comments expressing concerns that the RMPA/EA does not define and analyze a preferred alternative.

***ORG-FONC:** The EA is invalid as a matter of law for failing to include a proposed action... By only identifying three conceptual alternatives from which various components will be selected by BLM to divulge a proposed action at a later date, BLM renders it impossible for the public or the agencies – including BLM – to evaluate “the environmental impact of the proposed action”, compare the proposed action to alternatives, or to have a clear basis of choice among options with the issues sharply defined.*

Multiple commenters (e.g., [ORG-FONC](#) and [ORG-DNCA](#)) developed separate alternatives that they requested the BLM consider for the Preferred Alternative and analyze compared to the other alternatives.

2.4.3 Alternatives Considered, but Not Analyzed in Detail

A. Recreation Outside CCNM Boundaries

Commenters conveyed the importance for the BLM to manage the CCNM in a way that considers impacts to and by the larger landscape.

***ORG-SF:** Because it is at the center of this network of protected lands, CCD serves as an essential link, both for wildlife and for recreation users, to other portions of the larger landscape. As such, the BLM’s management decisions will determine whether this unit supports, or harms, the conservation and sustainable recreation opportunities that are occurring (or being planned) across these other properties.*

2.5. ALTERNATIVES: MENU OF OPTIONS FOR PREFERRED ALTERNATIVE

2.5.1 Land Uses

A. Agriculture and Grazing

Generally commenters conveyed support for the benefits and protection of sustainably managed agriculture and grazing operations. A few raised concerns about managing grazing in a way that minimizes its impact on habitat and wildlife.

***ORG-PLC:** We support BLM’s Alternative A that would “continue to manage livestock grazing as specified in the 2014 Interim Management Plan, replacing and maintaining infrastructure over time to support this program.” We are not supportive of additional grazing. In addition, grazing should be phased out when inappropriate due to resource concerns such as water quality or endangered species.*

B. Acquisition / Easements

The BLM received comments that expressed both support for and concerns with potential land acquisition and easements. Those who raised concerns stated that Presidential Proclamation 9563 prohibits incorporating any lands into the property that are not already included within the property's boundaries. If adjacent land were proposed to be acquired by the BLM, that would require a separate presidential proclamation/congressional legislation, and the property would need to undergo its own NEPA planning process. Other comments supported the BLM considering opportunities for land acquisition/easements, as this would expand options to design more sustainable and logical public access (e.g., trail networks).

***AG-COUNTY_SC-BOS-D3:** [W]ith respect to the C-CD property, no lands outside of the current property boundaries can be automatically incorporated into the CCNM. Moreover, if adjacent land is proposed to be acquired by the BLM, that property would have to go through its own process to become part of the CCNM, either through a separate Presidential Proclamation or through Congressional Legislation, where that property would go through its own environmental review and management plan with public participation.*

***FORM_A-MTB:** Consider acquisition of neighboring lands, or easements, from willing sellers that support C- CD objects and values or provide opportunities for public access to C-CD, consistent with resource management goals and objectives. Collaborate with local experts in trail design and construction to ensure locally appropriate, high quality, and low maintenance trail infrastructure.*

2.5.2 Cultural and Heritage Resources

A. Local Tribal Uses

Commenters emphasized a need to protect cultural resources and protect the rights of Tribes. Several specifically mentioned the descendants of the Cotoni People and expressed appreciation for the BLM's engagement with the Amah Mutsun Tribal Band as an advisory partner in the management of the C-CD property.

2.5.3 Fire and Fuels

A. Fire Management

Overall, comments frequently identified fire management as a major priority for the BLM.

***ORG-SF:** It is essential that the BLM develop a comprehensive plan to prevent, mitigate, and respond to wildfire. The BLM should develop its wildfire prevention and response plan in close coordination with CalFire, the Bonny Doon Fire Safe Council, and with input from the surrounding communities. We are pleased that the BLM is proposing to continue, and expand, its shaded fuel break projects along Warrenella Road and Bonny Doon Road to mitigate the risks of wildfire and help keep surrounding communities safe. We also strongly support the proposed prescribed burning program on Cotoni-Coast Dairies presented in Alternatives B and C to promote ecological health and reduce the risk of catastrophic wildfire.*

2.5.4 Vegetation Management

A. General Management of Vegetation

The BLM received comments that overall supported the BLM implementing a comprehensive weed management plan, particularly to help reduce wildfire risk and the spread of non-native species. Multiple comments encouraged the BLM to work with biological processes for vegetation control (e.g., insects) and ecological succession. Commenters also requested the BLM further articulate its Integrated Pest Management approach for the property. Those that supported the option with the greatest land preservation approach, Alternative A (which does not include substantial new vegetation or fuels management), requested the BLM to develop a planned grazing program to maintain grasslands on the property.

B. Herbicides and Pesticides

The BLM received many comments expressing concern about the application of herbicides and pesticides. Many expressed opposition specifically to aerial or broadcast application as described in Alternative C. Some comments suggested specific conditions and limitations for applying herbicides and pesticides, including no use of synthetic herbicides/pesticides, use herbicides/ pesticides after exhausting other alternatives, and implement informational and notification procedures for neighboring properties.

***ORG-CCOF:** The monument boundaries are adjacent to a number of certified organic farms for which herbicide drift can cause economic damages.... [The BLM should] remove the option to allow helicopter application of Aminopyralid and Clopyralid or any synthetic herbicide or pesticide within monument boundaries. The risk of drift from aerial applications is too high.*

***ORG-POST:** Selective use of herbicides for managing invasive species (e.g. Clematis vitalba) is important for effective control, but must be implemented in a measured way and not through broadcast spraying (MA-VEG-7).*

2.5.5 Biological Resources: Habitat, Wildlife, and Special Status Species

A. Habitat Protection and Restoration

***ORG-POST:** ...strongly supports the creation of core fish and wildlife protection areas that will help ensure biodiversity conservation goals can be achieved more effectively and efficiently. It's unclear whether the Recreation Management Zones (RMZs) were defined to achieve these goals. Core habitat areas should be defined to meet biodiversity conservation goals and located in areas known or likely to be used by wildlife, including creek corridors and ridgelines. Diverse habitat types, elevation gradients, and connectivity must be protected to support climate change adaptation.*

A few comments also requested the BLM further consider Wild and Scenic designation of San Vicente Creek and other creeks, which could help support recovery of native fishes and other aquatic species.

B. Wildlife and Special Status Species Protection

ORG-DF: Any extensive development of the property would trigger the need for Biological Opinions from NOAA Fisheries and the US Fish and Wildlife Service for the various listed species found on the property, including Central California Coast coho salmon, Central California Coast steelhead trout, California red- legged frog, and potentially tidewater goby. It is not clear to Defenders how development of the site could proceed given the high levels of potential disturbance to listed species proposed in several of the RMPA alternatives. The C-CD RMPA already outlines substantial disturbance to listed species caused by general habitat damage, grading of new parking areas, etc. This type of development seems contrary to the California Coastal National Monument Boundary Enlargement proclamation....

IND-0036: ...such trail networks (and potential areas where bikers, hikers, and dogs might foray from such networks) should not negatively impact the 40 specific species (plus) that are “objects” to be protected on the C-CD site many of which are concentrated in the riparian areas on site – as well as not deteriorate habitat conditions in ANY of the C-CD site’s riparian areas.

IND-0273: Given the documented impacts of human activity on animal communities and the already substantial land area in the Santa Cruz Mountains devoted to recreation, further research is needed to understand how large a geographic area devoted to recreation and at what human densities these animal populations can withstand without declining.... With these results in mind, I ask that BLM have an adaptive roll out of recreation on the property with the most restrictive measures first (such as those outlined in alternative A) combined with monitoring to assess impacts on wildlife. If impacts are determined to be negligible, then and only then would further development be allowed.

2.5.6 Services and Facilities

A. 4 T’s – Traffic, Trauma, Toilets, and Trash

The BLM received several comments concerned with the amenities and services to fully cover what were often referred to as the “4T’s” – Traffic, Trauma (police, fire, and rescue response), Toilets, and Trash. Occasionally, “transients” were also identified as a concern. Commenters appreciated management actions that would minimize public access impacts like providing garbage receptacles in closed containers and removed daily. Commenters also valued amenities that supported equitable access to those with limited mobility (e.g., ADA compliant picnic tables).

Commenters requested evidence that the BLM will have the capacity and resources to implement these amenities and services. Several comments suggested leveraging opportunities such as volunteer backcountry patrols to help expand the BLM’s capacity to monitor and enforce activities on the property.

IND-0008: Our North Coast landscape is shared by a continuous stream of travelers. The expense of our local area and other social factors result in an abundance of transients living out of vehicles parked nightly up and down our coast. Any new parking & public toilet facility needs to be designed to mitigate against these becoming relied on for nightly camping.

IND-099: ...reoccurring problems had to do with irresponsible behavior by out-of-area visitors who frequented the North Coast beaches and literally left tons garbage for the Santa Cruz

County to pick up.... There were also continual problems with make-shift and generally poorly designed & inadequate parking space and constant crime due to the remoteness of the area and the relatively long wait for response time from police and other emergency services.

ORG-SCC-HA: *Before the monument can open, we need a sustainable source of funds for maintenance, including trash pickup, bathroom cleaning, and rule enforcement.*

2.5.7 Access Opportunities

A. General Access and Allowable Uses

Commenters expressed diverse perspectives on the types and level of allowable recreational activities. As previously mentioned, those who wished to maximize public access generally supported the public access and allowable recreational uses in Alternative C (although not all proposed access/uses were supported), whereas others generally supported the components in Alternative A that limited access and allowable activities to have a smaller environmental impact than the other alternatives.

Commenters generally supported allowing multiple types of activities, as long as these activities are managed in a way that minimizes impacts to the ecosystem and neighboring communities and aligns with current or upcoming planning and management.

Commenters expressed concern about impacts to the neighboring communities and properties and suggested either prohibiting or limiting activities in areas close to these communities and properties.

B. Research, Education, and Stewardship

Several commenters requested the BLM support opportunities for research and education to enhance awareness and understanding of the Monument and the surrounding landscape. Commenters also recommended supporting volunteer opportunities that could both help address personnel capacity concerns as well as support educating visitors about the Monument's history, culture, geology, biology, trails, etc.

C. Parking/Access Fees

The BLM received differing viewpoints related to charging fees or permits for parking and/or trail use. Several commenters viewed fees and permits as a reliable source of funding; others were concerned this could lead to potentially dangerous and crowded on-road parking.

ORG-MBOSC: *The BLM should charge for parking to create a sustainable funding source for the management of the property. Parking lots should be large enough to prevent overflow parking on local roads.*

AG-COUNTY_SC-BOS-D3: *Parking on the North Coast also requires vigilance to prevent unauthorized and dangerous parking along the coast highway and county roads.... The EA needs to analyze the potential impact on public safety from the charging of parking fees that would result in on-road parking at C-CD access points.*

D. Trails and Access Points

Commenters shared different perspectives for specific trail design and access points. Several comments raised safety concerns for specific local roads, which they stated the road conditions would be unsafe (e.g., steep grade, narrow, or sharp turns) or impede local services (e.g., Cal Fire responsiveness as the Big Creek Fire Station on Swanton Road). Comments on the potential access points and trailheads were similar to previous comments raised during the scoping period and documented in the [scoping report appendices](#). Comments related to the specific trail design and access points include:

Access Points / Trails

- **Swanton Road.** Offers access from major roads to the northern part of the property. However, there are concerns related to public safety and road conditions (e.g., tight corners and narrow road) and potentially impeding the Big Creek Fire Station emergency response.
- **Molino Creek.** Proposed trailhead promotes public access; however, the area has sensitive habitat and wildlife.
- **Warrenella Road.** Utilizes existing road to access areas closer to the middle of the property; however, has safety and road condition concerns.
- **Cement Plant Road.** Presents an alternative to using Warrenella Road. However, there were concerns about unsafe road conditions, potential for traffic accidents, and negative impacts to small community nearby.
- **CEMEX Site.** Currently unavailable (county planning underway), but was proposed as an alternative to Cement Plant Road.
- **San Vicente Creek.** Utilizes existing parking and access to the center of the property; however, there are special status species (salmonids) in the creek.
- **Liddell Creek.** Proposed trailhead promotes additional public access; however has sensitive habitat, wildlife, and cultural resource concerns. There are also public safety concerns (flooding potential) and possible land use conflicts (quarry operations and public water supply facility).
- **Bonny Doon Road.** Utilizes an existing road. However, there were concerns about unsafe road conditions and negative impacts to local communities.
- **Yellow Bank Creek.** Potential location for building a pedestrian bridge across Hwy 1.
- **Marina Ranch Gate.** Offers an access point to the southern part of the property; however, there are sensitive and culturally significant areas to avoid.
- **“Northgate” (Hwy 1 marker 30.22).** Proposed as an alternative access point (rather than Swanton Road and Cement Plant Road) that allows for connecting to the San Vicente Redwoods.
- **“Southgate.”** Proposed as an alternative access and trail system for accessing Recreation Management Zone 3. Some comments recommended a hybrid access option of Northgate and Southgate.

Trail Connectivity

- **San Vicente Redwoods.** In general, overall support for connecting to the San Vicente Redwoods trail. Several requested that trail development prioritize this connection.
- **Rail Trail.** Connecting to the Rail Trail was also generally supported.

- **East-West / North-South.** Several comments requested the BLM to consider connecting the ends of the property together to promote regional trails. Commenters noted that the BLM should avoid sensitive habitat, wildlife, and cultural resource areas.

E. Common Recreational Uses – Hiking, Biking, and Equestrians

Commenters with concerns mentioned environmental impacts (e.g., erosion) of several of these common recreational uses and recommended limiting these activities to minimize such impacts. Several also expressed concerns about potential user conflicts on multi-user trails. Comments in support of allowing biking, hiking, and equestrian access stated these activities provide the public with an immersive natural experience, and can be managed in a way that minimizes environmental impacts (e.g., close bike and equestrian trails during wet periods to limit erosion and trail failure).

F. Off-Trail Hiking and Camping

Comments ranged from a desire to have backcountry hiking and camping options to prohibiting off-trail hiking and camping. Comments with concerns about allowing hike-in/off-trail or dispersed camping stated that this may lead to issues such as increased wildfire risk, transient encampments, trash, and crowded parking/trails. Comments suggested either prohibiting camping or minimize impacts (e.g., special use permits, seasonal limitations, and prohibiting campfires).

G. E-bikes

Comments differed on whether e-bikes should be allowed on trails. Those in support indicated e-bikes enable access by a more diverse array of cyclists and should be allowed on bike access trails in a manner consistent with the BLM regulations. Other commenters expressed safety concerns about the speed of e-bikes, questioned whether e-bikes are allowed under the C-CD deed restrictions, and/or questioned e-bike management given neighboring properties' restrictions (e.g., San Vicente Redwoods prohibits e-bikes). Some comments clarified support for allowing Class I e-bikes, but had concerns about Class II e-bikes.

H. Dogs

Comments ranged from allowing dogs to be off leash to prohibiting dogs on the property. Those who recommended prohibiting dogs expressed concerns that even with on-leash rules, dogs might disturb sensitive species (e.g., red-legged frog) and vegetation, risk spread of invasive species, and potentially conflict with other recreational users. Other comments conveyed caution and suggested methods to minimize potential dog impacts (e.g., dogs stay on leash, confined to established trails, and/or kept out of sensitive habitats). Among those who supported allowing dogs with limitations, there were diverse opinions on whether to establish enclosed, off-leash areas.

I. Other Specific Recreational Uses

The following issues were raised less frequently than the vast majority of comments and/or no comments offered an opposing opinion:

- **Hang gliding/paragliding** – Differing perspectives on allowing this activity. Comments in support offered specific strategies to address safety concerns. Others noted the neighboring San Vicente Redwoods property prohibits this activity.
- **Rock climbing/rappelling** – Differing perspectives on allowing this activity. Several comments who voiced concerns also noted the San Vicente Redwoods property prohibits this activity.

- **Fishing** – Commenters generally supported the BLM’s decision to prohibit fishing, citing concerns about impacts to endangered/special status species and habitat.
- **Smoking** – Comments supported prohibiting smoking on the property, particularly due to fire risks. No comments were received that conveyed an opposing view.

2.5.8 Hunting / Shooting

Commenters expressed diverse perspectives about allowing recreational hunting and/or target shooting. Several indicated allowing hunting conflicts with management restrictions like the Presidential Proclamation. Many shared concerns that hunting/shooting poses public safety risks (particularly due to the property’s relative small size and proximity to other properties/communities) and potential environmental damage (e.g., habitat/vegetation degradation, risk to cultural resources, pollution, wildfire risk, noise disturbance, and affected wildlife). Among these comments, several also expressed opposition to habitat/wildlife enhancement for the purposes of recreational hunting.

Some comments clarified that the only hunting that should be allowed is necessary management actions to reduce non-native wildlife (e.g., feral pigs).

Comments in support for allowing these activities included those stating that hunting can be managed in a safe and sustainable manner through close coordination with California Department of Fish and Wildlife (CDFW). Commenters identified multiple benefits including providing a source of funding to support management and provide an opportunity for an activity unavailable anywhere else in the county. As an alternative to firearms, some requested that the BLM at least allow archery hunting.

Multiple comments, including from the California Coastal Commission ([AG-CCC](#)), indicated they need more information about the proposed hunting-related activities to adequately evaluate potential impacts. CDFW ([AG-CDFW](#)) issued a comment to address several of the concerns raised about hunting and offered several considerations for how the BLM might structure and implement its hunting program.

2.6. ENVIRONMENTAL ANALYSIS

2.6.1 Analysis and Uncertainty

A. Adequate Analyses and Baselines

The BLM received multiple comments that stated that the EA did not provide sufficient descriptions of existing conditions (Chapter 3) or analyses on environmental consequences (Chapter 4). This often led to commenters requesting the BLM conduct an EIS process.

***ORG-SF:** ...urges the BLM to complete more thorough baseline inventories of natural and cultural resources prior to commencing any new recreational activity.... Furthermore, the BLM should develop adaptive management criteria that outline the circumstances under which recreation uses might be limited or modified if deleterious impacts are observed. Those adaptive management criteria, and plans, should be completed before new recreation is allowed.*

ORG-DNCA: *[P]ublic access is a new and completely different activity on this property. The short-term and cumulative impacts of such a fundamental change in management from a century-old practice must be fully assessed with a full EIS process.*

2.6.2 Existing Conditions and Environmental Consequences

A. Biological Resources

The BLM received comments indicated the RMPA/EA did not adequately survey and document specific biological resources (e.g., plant communities, animal species, habitat areas, etc.). Commenters often requested that more detailed surveys and impact reports are completed prior to any activities that might disturb the soil and include adequate monitoring.

AG-CITY_SCWD: *The SCWD completes annual juvenile salmonid monitoring surveys in Liddell Creek and Laguna Creek through snorkel survey methods. In 2015 and 2016, juvenile coho salmon (*Onchorhynchus kitsuch*) were observed in Laguna Creek; in 2018, juvenile coho salmon were observed in Liddell Creek. Please update the document to reflect recent observations of coho salmon in Liddell Creek and Laguna Creek.*

B. Cultural and Historic Resources

The BLM received comments requesting that archaeological surveys and impact reports are completed prior to any activities that might disturb the soil and include adequate monitoring.

C. Fire and Fuels

As mentioned previously, comments generally supported proactive management actions to reduce the rise of hazardous fire. A few comments raised concerns with specific strategies such as the effectiveness for current rural road conditions as fuel breaks.

ORG_DNCA: *Based on recent fires in California, where wildfires have jumped Highway 101, rural roads like these cannot be considered firebreaks or even reliable access for suppression. The Wildland Urban Interface (WUI) between C-CD and Bonny Doon, Davenport, New Town, and or Swanton is of particular concern to the DNCA.*

D. Water Resources

A few commenters were concerned the RMPA/EA utilized previous research on existing water use, water rights, and diversions (e.g., compiled by the Santa Cruz Resource Conservation District in 2013), that they believe to be inadequate. Commenters requested the BLM conduct a more thorough and updated survey of water use, water rights, and diversions.

AG-CITY_SCWD: *In Chapter 3.9, the RMPA-EA references additional research on existing water use and diversions on the Cotoni-Coast Dairies property compiled by the Santa Cruz Resource Conservation District in 2013. As the senior water rights holder on Liddell Creek and Laguna Creek, it is our belief that the referenced document was not sufficiently detailed to adequately identify all existing and potential water uses and restrictions or otherwise fully characterize water rights on the property. Please include an exhaustive study of existing and potential water uses and restrictions, diversions and water rights from Liddell Creek, Laguna Creek, and associated springs and tributaries.*

E. Agriculture and Grazing

Commenters shared concerns that the RMPA/EA does not adequately describe agriculture and grazing benefits (e.g., habitat connectivity and vegetation fuels management), nor does the EA sufficiently consider and present mitigation measures to minimize public access impacts on agriculture and grazing.

ORG-SCCFB: [N]owhere does the EA acknowledge or attempt to identify, evaluate, and mitigate the adverse impact that the proposed alternatives will have on agriculture [e.g., aerial spraying of herbicides adjacent to organically farmed fields, trespassing, vandalism, stress to grazing cattle].

F. Lands and Realty

AG-COUNTY_SC-BOS-D3: [T]he RMPA needs to be amended to accurately reflect the language in Proclamation 9563 and to specify that the RMPA only applies to the current C-CD boundaries. This means that the Lands and Realty section needs to be revised to reflect, that with respect to the C-CD property, no lands outside of the current property boundaries can be automatically incorporated into the CCNM.

G. Services and Facilities

The BLM received multiple comments expressing concerns that local services (e.g., local law enforcement) have the capacity to support sufficient monitoring, enforcement, and emergency response. Commenters indicated that local authorities already limited staffing and resource challenges.

H. Transportation and Travel Management

Commenters requested more information on the transportation system (e.g., traffic analysis, parking analysis, and design features), both for near-term and long-term projected impacts.

AG-CT: We request to review the full traffic analysis to see how the increased vehicle trips will impact our facilities. Specifically, we would like to see the impacts of the project at the Caltrans intersections on State Route (SR) 1 to examine what operational and safety issues may occur.

AG-COUNTY_SCPD: A traffic analysis should address overall circulation and quantitatively assess transportation impacts using trip generation calculations. Additionally, a parking analysis should be provided as part of the traffic study to determine the appropriate amount of parking supply to prevent overflow parking on Highway 1. The analysis should also address safety issues, specifically related access off of Highway 1 and pedestrian roadway crossings.

ORG-DNCA: There must be a detailed analysis of traffic safety issues based on accurate peak visitor projections now and using future planning horizons, including background traffic.

I. Access and Recreation

Many comments called for more detailed analyses related to increased public access and recreational activities.

ORG-DNCA: *Human access to this new addition to the CCNM brings with it likely impacts of human access to sensitive species and habitats never considered under the original CCNM. These impacts, and particularly their cumulative impacts, must be fully considered as new uses and access is developed.*

Commenters frequently requested the BLM provide information and analyses specific to the proposed activity (e.g., specifically analyze hunting impacts).

J. Noise

Given that public access is new to the property, several commenters requested the BLM conduct more detailed analyses on potential noise impacts on wildlife and neighboring communities.

K. Visual Resources

Commenters called for additional information about facilities and other development to analyze potential visual impacts.

ORG_DNCA: *[T]here is no mention of how the visual impacts of parking areas and associated facilities will be mitigated. The DNCA requests that Appendix D be amended to include visual mitigation measures. Additionally, the DNCA does not support the VRM Class III assigned to the three Alternatives. Changes to the visual landscape should be managed pursuant to VRM Class II. Lastly, site topography is not acknowledged as a key determinant of impact [e.g., parking lot visible from upper marine terraces].*

2.6.3 Cumulative Effects

The BLM received multiple comments that identified where the EA appeared to lack sufficient analyses of cumulative or synergistic environmental, economic, and social impacts of allowing increased public access. For instance, several comments said the cumulative impacts did not analyze proposed allowable uses in adequate detail (e.g., specifically analyze impacts of recreational hunting).

Concerns were raised about impacts on a range of issues, including adjacent properties and communities, non-federal public services and infrastructure, sensitive plant and animal species, water reliability, pollution, fire risk, illegal activities, etc. Comments also requested the BLM consider how other recreational opportunities in the region might further add to these impacts (e.g., potentially even more traffic and crowding due to overall attraction to the region). Comments called for more detailed and quantified analyses of these cumulative/synergistic impacts and associated mitigation measures.

ORG-DNCA: *The RMPA/EA fails to adequately analyze the RMPA's synergistic impacts with the two Reasonably Foreseeable Future Actions (RFFAs), which are identified.... It underestimates both the scale of impacts and the qualitative changes in impacts, which result uniquely from the combination of C-CD actions with other adjacent new recreation uses. In particular the revision must address additive and synergistic effects on the immediate risks to transportation, emergency services, public health, and safety of the Davenport/Swanton communities.*

ORG-FONC: *[D]espite acknowledging the existing water quality degradation already adversely affecting steelhead and coho, the EA fails to provide sufficient data to reasonably assess whether the proposed trails, parking areas, visitor numbers and proposed uses, when combined with existing sediment sources to the creeks, will significantly contribute to cumulative impacts to water quality and listed salmonids.*

Comments also indicated that without a separate cumulative effects analysis for each alternative, it is difficult to ascertain each alternative's beneficial or negative impacts.

SECTION 3 | AGENCY, ORGANIZATION, & FORM LETTER COMMENTS

Comment Code Legend

AG-*NAME*	Agency Comment
ORG-*NAME*	Organization (or Club) Comment
FORM-	Form Letter

Agency and Organization Comments

- [Subsection 3.1](#) provides comments submitted by agencies. Table 3.1.1 lists the commenting agencies.
- [Subsection 3.2](#) provides comments submitted by organizations or clubs. Table 3.2.1 lists the commenting organizations.

Form Letters

The BLM received two types of form letters – one focused on public access and recreational activities, including mountain biking [“Form Letter A” - FORM_A-MTB], and the other focused on natural resource and recreation/trail management issues [“Form Letter B” - FORM_B-ENV].

- [Subsection 3.3](#) provides the lists of individuals who submitted either Form Letter A or Form Letter B. An example of each type of form letter follow the list of individuals.

3.1. AGENCY COMMENTS

Table 3.1.1 lists the agencies provided written comments on the Draft RMPA/EA.

Table 3.1.1 Commenting Agency List

Comment Code	From	Commenter
AG-CCC	California Coastal Commission	Rainey Graeven
AG-CDFW	California Department of Fish and Wildlife	Gregg Erickson
AG-CT	California Department of Transportation	Chris Bjornstad
AG-CITY_SCWD	City of Santa Cruz Water Department	Rosemary Menard Ezekiel Bean Maryna Sedoryk
AG-COUNTY_SCPD	County of Santa Cruz Planning Department	David Carlson
AG-COUNTY_SC-BOS	Santa Cruz County Board of Supervisors	Greg Caput
AG-COUNTY_SC-BOS-D3	Santa Cruz County Board of Supervisors, District 3	Ryan Coonerty
AG-COUNTY_SMPD	County of San Mateo Parks Department	Samuel Herzberg
AG-US_HR	United States House of Representatives	Anna Eshoo Jimmy Panetta

California Coastal Commission

[AG-CCC]

A. General Management, Planning, and Coordination

The California Coastal Commission described the Commission's role in the RMPA (e.g., jurisdiction under the Coastal Act and the Act's requirements, the coastal development permit [CDP 3-11-035 that includes the C-CD property]). The Commission expressed support for the overall planning and long-term management intent of the RMP.

The Coastal Commission recommended additional interaction and coordination planning with nearby projects and plans (e.g., Local Coastal Program amendments and reuse plan for the Cemex Property and County Regional Transportation Commission rail and trail project), including understanding and addressing combined impacts on the north coast area more broadly.

The agency also encouraged the BLM to engage in ongoing collaboration with the Mutsun Land Trust and other entities representing tribal interests (e.g., California Native American Heritage Commission, California State Office of Historic Preservation, and other Tribal Historic Preservation Officers).

B. Overall Review of the Alternatives

The Coastal Commission indicated all three alternatives seem consistent with Coastal Commission requirements in regards to maintaining ag lands, no timber operations, and minimize/avoid impacts to archaeological resources.

The agency expressed concerns that Alternative A would result in underutilization of the public recreational access potential of the property, thereby not appropriately maximizing public recreational access opportunities as required by the Coastal Act or the terms and conditions of the coastal development permit (CDP) 3-11-035. The Coastal Commission noted the 2011 Interim Management Plan that the agency approved served as a starting point for public access with the assumption that a significantly greater portion of the property for a wider range of public recreational access opportunities would be available at a later date. The Coastal Commission stated that both Alternatives B and C appear to be more compliant with the Coastal Act and CDP in terms of offering greater public recreational access opportunities.

The Coastal Commission recommended that the complete array of public access and recreational opportunities (including but not limited to those considered in Alternative C), should be a part of the final RMPA, including considering Liddell Creek and Molino Creek as trailhead opportunities.

C. Vegetation Management

The Coastal Commission requested more information on the use of grazing and herbicides in the final RMPA/EA, including the goals, methods, and adaptive management strategies identified in a grazing management plan. The agency requested more details on herbicide application (e.g., targeted or applied broadly) and recommended that herbicides be used only after less environmentally damaging alternatives have been exhausted.

D. Habitat

The Coastal Commission indicated that Alternative A generally appeared to minimize impacts to Environmentally Sensitive Habitat Areas (ESHA) as required under the Coastal Act; however, the alternative did not include longer-term measures needed to address significant ecological areas.

E. Hunting

The Coastal Commission stated it is not clear if hunting is appropriate or allowable under the Coastal Act or CDP. Therefore, the agency recommended the BLM eliminate hunting from the final RMPA unless the final RMPA and EA adequately demonstrates that hunting is consistent with these property management requirements. The RMPA and EA would also need greater detail on how hunting would be administered, managed, regulated, and monitored.

F. Parking Fees

The Coastal Commission recommended that the BLM provide free parking, which aligns with Coastal Act direction (Section 30213) to support lower-cost or free access and avoid incentivizing the public to seek free options and parking illegally or haphazardly. If parking fees will be used, the final RMPA/EA should adequately demonstrate the need for parking fees and describe a fee-based program.

G. Visual Resources

The Coastal Commission stated that Alternatives B and C appeared to minimize adverse impacts to visual resources. Alternative A also appeared to minimize visual impacts; however it did not align with the Coastal Act's intent to maximize ocean and coastal view opportunities. The agency spoke to specific developments that could be constructed/implemented in a way that would be sensitive to public views and support public access (e.g., Highway 1 pedestrian bridge crossing).

California Department of Fish and Wildlife

[AG-CDFW]

A. Hunting

The California Department of Fish and Wildlife (CDFW) addressed several recurrent hunting impact concerns raised by the public, particularly those related to safety, wildlife, and noise pollution.

- **Safety.** CDFW articulated numerous ways that hunting and hunters can be regulated to improve public safety (e.g., spatial and physical buffers between hunting and residential areas, designated special hunt days, and limited user groups). CDFW stated that hunter safety has substantially improved since implementing State-required safety trainings.
- **Wildlife.** CDFW clarified how hunts can be structured to significantly reduce negative impacts to sensitive wildlife (e.g., limit allowable game species and hunter use levels). CDFW stated that hunter use levels should be established base on baseline game population surveys and should include follow-up monitoring in conjunction with CDFW.
- **Noise Pollution.** CDFW indicated that noise pollution should be negligible, as shooting a firearm while hunting occurs infrequently due to the nature of the sport.

California Department of Transportation

[AG-CT]

A. Traffic

The California Department of Transportation (Caltrans) stated that it supports local development that is consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. The agency requested review of the full traffic analysis to understand how increased vehicle trips would impact Caltrans' facilities (e.g., operational and safety impacts and needed improvements). Caltrans noted that new direct access to Highway 1 should not be considered as an alternative. Any work completed in the State's right-of-way will require an encroachment permit from Caltrans and must be done to Caltrans' engineering and environmental standards, and at no cost to the State.

City of Santa Cruz Water Department

[AG-CITY_SCWD]

A. General Management, Planning, and Coordination

The City of Santa Cruz Water Department (SCWD) described its water supply and infrastructure system that occurs within or near the project area (e.g., raw water pipeline north from Laguna Road and forks to two diversion facilities). The agency also explained it has two pending Habitat Conservation Plans (HCPs) and one complete HCP, some of which occur within the project area.

Therefore, SCWD urged the BLM to plan and design projects appropriately to avoid impacts to SCWD's water supply and infrastructure system, including impacts to water quantity/quality and protected species. The agency requested early coordination if the BLM anticipated impacts to SCWD facilities or listed species.

B. Grazing

SCWD expressed concerns that the proposed grazing activities in Alternatives B and C will negatively impact water resources, habitat and wildlife (e.g., reduced surface water flows, eroded habitat, reduced/damaged vegetation, increased sedimentation, and increased nutrients from manure). The agency requested the BLM analyze water quality impacts due to grazing activities and more detailed information regarding the water source for the proposed infrastructure improvements and any anticipated changes in water demand from Liddell Creek or Laguna Creek as a result of changes to total pasture area, total head of cattle, and updated water infrastructure.

C. Water Use and Water Rights

SCWD expressed concern that the RMPA/EA utilized previous research on existing water use and diversions that SCWD believes did not adequately identify and characterize water use and water rights. The agency requested the BLM include an exhaustive study of existing and potential water uses and restrictions, diversions and water rights from Liddell Creek, Laguna Creek, and associated springs and tributaries.

The agency also requested the BLM fix a typographical date error about SCWD's water rights - the document should state that SCWD procured rights to the property surrounding Liddell spring, Liddell Creek, and associated water rights, including downstream riparian rights, in 1913 and operates its diversion under senior pre-1914 water rights.

D. Fire and Fuels

SCWD requested that the BLM describe the increased potential for, and impacts of, wildland fires due to increased recreation activity particularly from mountain bikes and camping.

E. Vegetation Management - Herbicides

SCWD expressed concerns about protecting source water from potential herbicide contamination. The agency requested the BLM expand herbicide buffer zones to include and protect all water bodies and features that potentially connect to water sources (e.g., karst features).

F. Special Status Species

SCWD noted juvenile coho salmon were observed in Laguna Creek (in 2015 and 2016) and Liddell Creek (in 2018), and requested the RMPA/EA be updated to include these recent observations of salmonids.

The agency stated that the RMPA/EA should be corrected to reflect that SCWD diversions in Liddell Creek and Laguna Creek should not be considered "significant limiting factors," because SCWD voluntarily maintains bypass flows sufficient for salmonids to comply with CDFW regulations.

G. Trails

SCWD shared specific concerns with trail designs associated with Liddell Creek (i.e., Bonny Doon Road trailhead and the Liddell Creek Trail, Alternative A), and that these design features will negatively impact the sensitive habitat, wildlife, and water resources in the area. SCWD requested the BLM study (prior to development) the potential water, habitat, and special status species impacts from the proposed development in the Liddell Creek area.

SCWD was also concerned with the proposed Cotoni Trail (Alternative B) and Yellow Bank North Loop Trail (Alternative C), where recreational use could lead to erosion and security risks to pipeline infrastructure and the potential degradation of critical access routes. SCWD requested the BLM describe all preventative and enforcement measures that will be taken to prevent the creation and use of unauthorized trails and closed access roads throughout the project area.

County of Santa Cruz Planning Department

[AG-COUNTY_SCPD]

A. RMPA/EA and FONSI

Santa Cruz County staff called for the BLM to more clearly describe how it arrived at the draft Finding of No Significant Impact decision based on the environmental analysis described in Chapter 4. For instance, County staff requested a detailed explanation and presentation of how the adverse effects described in Chapter 4 would be avoided, minimized, or mitigated to a less than significant level (e.g., identify a project design feature(s) or use restrictions that avoid, minimize or mitigate the adverse effect).

B. General Management

County staff indicated that Alternative B, or a similar amount of parking and trail development, provided a balance between recreation and wildlife habitat protection. County staff encouraged the BLM to incorporate best management practices and mitigation projects to compensate for

development impacts on wildlife and native plant communities (e.g., removal of non-native plants, habitat enhancement for special status species, etc.).

County staff requested that the General Monitoring Plan (Appendix C) include more details on the monitoring and adaptive management process, including public involvement during management evaluation.

C. Vegetation Management

County staff requested more information about the BLM's integrated pest management (IPM) policy and Weed Management Plan and offered several resources for reference and coordination (e.g., County IPM policy and roadside vegetation management plan and the County Weed Management Area).

County staff did not support the use of helicopter herbicide spraying, expressing concern aerial spraying would impact adjacent communities and farms.

County staff supported the use of fire to manage and restore the landscape.

D. Habitat and Wildlife

County staff called for the RMPA/EA management actions to include provisions for identifying and considering less environmentally damaging alternatives, which would make these actions more consistent with County policy and local laws.

County staff preferred the Alternative B trail routes (compared to Alternative A) that better protected the Molino Creek and Liddell Creek sensitive areas. County staff also stated that San Vicente Creek should be identified as a coho salmon and steelhead stream.

E. Trails and Access Points

County staff called for more information or additional analyses for trail uses (e.g., dogs with or without leashes; single and/or multi-use trails) and trail alignments (particularly to avoid existing wildlife communities). County encouraged offering "hiking only" trails for visitors to have a quieter experience option without constantly being on alert for bikes.

County staff were concerned with several of the proposed trail alignments and parking options:

- **Swanton Road.** Potential traffic/community impacts.
- **Bonny Doon Road.** Potential disturbance to riparian and scenic views and safety concerns.
- **Liddell Creek.** Located within a floodplain and riparian woodland area.
- **Warrenella Road Top.** Potential conflicts with other uses of the private Warrenella Road; uncertain if minimization measures such as acquiring access easements and parking fees are viable.

Staff specifically did not support the proposed parking alternative at Bonny Doon Road and recommended avoiding Liddell Creek parking area (Alternative A), and Warrenella Road Top (Alternatives B and C). County staff offered minimization measures for several of these options (e.g., road improvements and adequate signage and physical barriers and warnings to the public about prohibited areas).

F. Transportation - Traffic and Parking Strategy

County staff requested more information on the transportation system (e.g., traffic analysis, parking analysis, and design features). In general, County staff supported fewer parking locations with higher amounts of parking to reduce congestion issues, and more evenly distribute parking locations (and therefore access) within the monument.

G. Trash

County staff underscored that one of the most critical aspects of reducing impacts on wildlife will be a robust system for preventing and managing garbage (and funding to maintain that system). Staff offered several specific components to that system (e.g., visitor education, designated picnic areas, no open garbage containers).

County staff were also concerned that overnight camping may lead to increased visitors and associated garbage. Staff instead supported the development of a small number of modest “hike in” camping.

H. Visual Resources

County staff expressed concerns that county-designated scenic roads could be impacted by project implementation. Staff offered specific design feature guidelines from the County General Plan (e.g., projects are to be evaluated against the context of their unique environment and regulate structure height, setbacks and design to protect visual and aesthetic resources).

Santa Cruz County Board of Supervisors

[AG-COUNTY_SC-BOS]

A. Comment Period Extension

Chairman Greg Caput, on behalf of the Santa Cruz County Board of Supervisors, requested an additional 30 days be added to the comment period.

Santa Cruz County Board of Supervisors, District 3

[AG-COUNTY_SC-BOS-D3]

A. RMPA/EA and FONSI

Santa Cruz County Board of Supervisor, District 3, Ryan Coonerty, stated the RMPA/EA overall lacked sufficient information to adequately justify the preliminary conclusion that the proposed FONSI decision. He said the revised RMPA/EA must either identify a preferred alternative that eliminates the inadequacy in the draft document or revise the environmental analysis in that document to adequately conform to the requirements of NEPA.

Supervisor Coonerty emphasized the Presidential Proclamation 9563 is, and should be more clearly presented in the RMPA/EA as, a guiding document for the RMPA/EA (e.g., fully list all the Proclamation provisions).

The Supervisor also requested some of the terminology be clarified and used consistently to reduce public confusion with the language (e.g., what is considered as “adverse” impacts and when “major” impacts are adverse or beneficial).

B. General Management, Planning, and Coordination

Supervisor Coonerty called for the RMPA/EA to provide evidence that the BLM will obtain resources (e.g., staffing and funding) necessary to ensure management sustainability (trash, facilities maintenance, law enforcement, etc).

The Supervisor also expressed concern about impacts on local law enforcement capacity and emergency response on the property, and ensuring sufficient resources to match increased visitors. He requested the EA provide evidence that either the impacts would not be significant with existing personnel or include mitigation measures to ensure adequate personnel.

C. Lands and Realty

Supervisor Coonerty stated the Presidential Proclamation 9563 prohibits incorporating any lands into C-CD that are not already included within the boundaries of the C-CD property. The RMPA needs reflect Proclamation 9563 provisions and to specify that the RMPA only applies to the current C-CD boundaries.

D. Education and Research

Supervisor Coonerty conveyed appreciation that the RMPA/EA fostered opportunities for partnerships with researchers across a variety of disciplines.

E. Cultural and Historic Resources

Supervisor Coonerty expressed support for protecting cultural and historic resources important to the Amah Mutsun and which also provide opportunities for public education of the Native Californians history.

F. Vegetation Management

Supervisor Coonerty supported vegetation management methods including cattle grazing, mechanical treatments, and prescribed burning.

The Supervisor opposed utilizing herbicides and pesticides.

G. Transportation and Access

Supervisor Coonerty requested more information on the transportation system (e.g., traffic analysis, parking analysis, and parking fees).

The Supervisor conveyed appreciation for design features that foster equitable access (e.g., public restrooms and picnic tables at access points).

The Supervisor expressed concerns with the proposed public access locations in Alternatives A, B, and C. The Supervisor encouraged the BLM to consider and analyze a specific northern access point (i.e., "Northgate" - Highway 1 mile marker 30.22), to minimize impacts on neighbors and county roads while still providing trail access and connectivity to San Vicente Redwoods.

H. Recreation

Supervisor Coonerty conveyed support or concerns for the following:

- Support for trail connectivity and offering trails for multiple use types (e.g., bike, horse, or hiking).
- Opposed to allowing campfires for overnight campers due to wildfire risk. If campfires are allowed, the RMPA/EA should comprehensively analyze potential impacts and articulated in a preferred alternative.

I. Hunting

Supervisor Coonerty expressed opposition to allowing hunting on the C-CD property due to concerns with public safety, wildlife. He stated that if hunting is allowed, the RMPA/EA should comprehensively analyze potential impacts and articulated in a preferred alternative.

County of San Mateo Parks Department

[AG-COUNTY-SMPD]

A. Trail Network

San Mateo County Parks indicated the C-CD National Monument has the opportunity to become part of a regional trail network. The agency shared specific nearby efforts (e.g., Ohlone-Portola Heritage Trail and the California Coastal Trail).

United States House of Representatives

[AG-US_HR]

A. Comment Period Extension

Members of Congress Anna Eshoo and Jimmy Panetta requested an additional 30 days be added to the comment period.

3.2. ORGANIZATION COMMENTS

The table below lists the organizations that provided written comments on the Draft RMPA/EA.

Table 3.2.1 Commenting Organization List

Comment Code	From	Commenter
ORG-AMLT	Amah Mutsun Land Trust	Rick Flores
ORG-CAMTB	California Mountain Biking Coalition	Austin McInerny
ORG-CC	Clean Coalition	Sahm W.
ORG-CCOF	California Certified Organic Farmers	Jane Sooby
ORG-CLF	Conservation Lands Foundation	Danielle Murray
ORG-CNPS-SC	California Native Plant Society, Santa Cruz Chapter	Linda Brodman
ORG-DF	Defenders of Wildlife	Andrew Johnson
ORG-DNCA	Davenport North Coast Association	Noel Bock
ORG-FOJ	Friends of Juristac	Greg SeaLion Cotton
ORG-FONC	Friend of the North Coast	Michael Lozeau
ORG-GRWMB	Girls Rock Women's Mountain Biking	Alexis Morgan
ORG-MBOSC	Mountain Bikers of Santa Cruz	Matt De Young
ORG-MLF	Mountain Lion Foundation	Debra Chase
ORG-PLC	Public Lands Conservancy	Tom Baty
ORG-POST	Peninsula Open Space Trust	Walter Moore
ORG-RBDA	Rural Bonny Doon Association	Ted Benhari
ORG-RMRHOA	Redwood Meadows Ranch Homeowners Association	Pamela Koch
ORG-SALC	San Andreas Land Conservancy	David Kossack
ORG-SASS	Safe Ag Safe Schools	Hektor Calderon Edward Rehanek
ORG-SBIS	South Bay Indigenous Solidarity	Membership
ORG-SC_CAN	Santa Cruz Climate Action Network	Pauline Seales
ORG-SCC-HA	Santa Cruz County Horseman's Association	Debbie Boscoe
ORG-SCCFB	Santa Cruz County Farm Bureau	Brendan Miele
ORG-SDMBA	San Diego Mountain Bikers Association	Susie Murphy
ORG-SF	Sempervirens Fund	Sara Barth
ORG-SRL	Save the Redwoods League	Anthony Castaños
ORG-USHPA	US Hanggliding and Paragliding Association	Jugdeep Aggarwal

Amah Mutsun Land Trust

[ORG-AMLT]

A. RMPA/EA Planning Process

AMLT indicated it was pleased to find that overall the issues in AMLT's scoping report comments were addressed in the Draft RMPA/EA related to protecting and preserving tribal access to ancestral land and resources.

B. Cultural and Historic Resources

AMLT conveyed satisfaction that the RMPA recognizes: a) the need to protect natural and cultural resources, b) active approaches to land stewardship practices, c) Resource Management Zone 4 will be managed for traditional cultural property values in collaboration with AMLT, and d) that through the 2016 Memorandum of Understanding with AMLT, traditional ceremonies and cultural practices of the Amah Mutsun Tribal Band, traditional ecological knowledge and traditional resource and environmental management practices, resource gathering, and education and interpretation will be fostered on the property.

C. Grazing

AMLT requested that the BLM evaluate the effects of cattle access on habitat quality (including water quality), particularly sensitive habitats like seeps, springs, and wetlands.

D. Trails and Access Points

Due to the sensitive riparian habitat and special status species present at Lower Liddell Creek, AMLT expressed concerns that public access could degrade the habitat quality (i.e., opposed the proposed parking lot and trails in Alternative A and the trail system located in Lower Liddell Creek in Alternative C; supported Alternative B which omits parking and trails from Lower Liddell Creek Watershed).

E. Recreation

Due to the large and heavy nature of horses and the erosion they can cause to trails, AMLT requested that the BLM limit the number of horses allowed on the trails.

F. Hunting

AMLT indicated it opposes hunting on the property except for cases where land managers are working to eradicate invasive species (e.g., feral pigs).

California Mountain Biking Coalition

[ORG-CAMTB]

A. General Planning, Management, and Coordination

The California Mountain Biking Coalition (CAMTB) encouraged the BLM to consult and coordinate with local/ experienced stakeholders, including neighboring property owners, land managers, communities, agencies, NGOs, etc. during planning phases (e.g., trail design) and management implementation (e.g., volunteer patrols).

CAMTB suggested specific strategies to help expand and sustain the BLM's management capacity, including:

- **Parking Fees.** Charging for parking (including offering annual parking passes) as a means to establish a sustainable funding source for property management.
- **Volunteer Patrol.** Establishing a volunteer backcountry patrol to augment the BLM's ability to provide public safety and protect sensitive resources.

B. Lands and Realty

[Similar comments to [FORM A-MTB](#) related to acquisition and easements.]

C. Access and Trails

CAMTB stated that trail design should prioritize maximizing access for all trail users and mitigating trail conflict potential, using today's best practices (e.g., BLM's Guidelines For A Quality User Experience, ADA accessible pathways, and educational opportunities on trails). MBOSC supported trail connectivity, including between east and west ends of the property and with neighboring properties (e.g., Rail Trail). However, MBOSC shared concerns about trails allowing a specific use(s) intersecting with a trail(s) that conflicts with that said use(s) (e.g., multi-use trail intersecting with restricted use).

[Similar comments to [FORM_A-MTB](#) related to total trail access, trail connections, and trail design.]

D. Recreation

[Similar comments to [Form_A-MTB](#) mountain bike directional trails, special use permits, and e-bikes.]

In addition to the similar comments in FORM_A-MTB, CAMTB specified that allowing Class I e-bikes into national trail network seems to be an emergent and logical policy trend.

Clean Coalition

[ORG-CC]

A. Grazing

The Clean Coalition expressed support for minimizing grazing activities (e.g., Alternative A).

B. Transportation and Access

The Clean Coalition indicated support for access and transportation that maximizes foot access onto the property and could be served by public transit (reducing the need for parking developments).

California Certified Organic Farmers

[ORG-CCOF]

A. Vegetation Management

The California Certified Organic Farmers expressed general support for a comprehensive weed management plan. The organization requested more details and commitment to use an integrated pest management approach (e.g., grazing, prescribed fire, ecological succession, biological controls, etc.).

The California Certified Organic Farmers shared concerns about the proposed herbicide activities, particularly herbicide drift or transport from aerial applications that can compromise neighboring organic farm operations.

The organization recommended specific methods and restrictions for applying herbicides and pesticides, including no helicopter application of Aminopyralid and Clopyralid or any synthetic herbicide or pesticide, and implement notification procedures for neighboring farms and ranches.

Conservation Lands Foundation

[ORG-CLF]

A. RMPA/EA and NEPA Process

The Conservation Lands Foundation (CLF) stated several statutes, policies, and legal requirements (e.g., Presidential Proclamation; Omnibus Public Lands Act; and BLM policies including Secretarial Order 3308, 2011 15-Year Strategic Plan, and policy manuals 6100 and 6220) dictate the property should be managed in a way that prioritizes conservation of its ecological, archeological, and cultural values over other uses, including recreation, within the National Conservation Lands.

CLF conveyed that the RMPA/EA overall lacked information to adequately analyze impacts of the proposed uses, particularly without a defined preferred alternative, and failed to foster informed decision-making and informed public participation.

CLF also requested the BLM extend the comment period until after the COVID-19 national emergency declaration is revoked.

B. General Planning, Management, and Coordination

CLF expressed concerns that the BLM will lack the capacity to manage a new expansive trail system (e.g., high trail mileage described in Alternative C). The organization supported the BLM's phased approach to constructing trails to monitor for impacts and apply adaptive management as needed.

C. Grazing

CLF shared concerns about grazing impacts (e.g., soil erosion) on sensitive habitat and wildlife. CLF recommended limited to no expansion of grazing activities.

D. Access Points

CLF recommended the BLM limit or prohibit development at the lower Liddell Creek area.

E. Recreation

CLF identified concerns with specific recreational activities, including:

- **Camping.** Prohibit off-trail or dispersed camping
- **E-bikes.** Prohibit e-bikes
- **Horses.** Limit or prohibit equestrian use to reduce habitat impacts

F. Hunting

CLF recommended the BLM prohibit hunting on the property due to the small size of the property posing safety concerns to recreationists and local residents.

California Native Plant Society, Santa Cruz Chapter

[ORG-CNPS-SC]

A. General Management and Planning

The Santa Cruz Chapter of the California Native Plant Society expressed support for Alternative A and recommended the BLM develop and implement a grazing program. The organization stated that these two management approaches offer the greatest protection and preservation of natural resources and wildlife. The organization expressed support for the BLM applying adaptive

management (e.g., using land use plans with specific, measurable goals, and outcomes to evaluate and modify to realize desired outcomes) for long-term stewardship of the property.

Defenders of Wildlife

[ORG-DF]

A. RMPA/EA and NEPA Process

Defenders of Wildlife (Defenders) conveyed that the RMPA/EA overall lacked information to adequately analyze impacts of the proposed uses. Defenders stated the proposed development and public activities appear to be contrary to the California Coastal National Monument Boundary Enlargement proclamation. Defenders called for the BLM to prioritize resource values over increased public access.

B. General Planning and Management

Defenders stated it supports a blending of lower-impact options for human access and long-term maintenance of the property (e.g., non-native/invasive species removal, habitat restoration, and wildlife mitigation). Defenders indicated opposition to the scope and scale of development in Alternative C, because it could cause overuse of the property and substantial wildlife disturbance.

Defenders shared concerns about long-term BLM capacity and requested the BLM provide more specific information about how BLM plans to obtain funding and resources to ensure management sustainability (e.g., trash services, facilities maintenance, enforcement, etc.). Defenders was particularly that Alternatives B and C would require constant management beyond the BLM's capacity. The organization expressed support for a phased approach for RMPA implementation with associated monitoring.

C. Recreation

Defenders state the level of public access and allowable activities described in Alternatives B and C would lead to multiple negative impacts to resources (habitat, wildlife, and cultural sites) and user/community conflicts, including public safety. Defenders expressed concerns that allowing camping and off-leash dogs, even with tight regulation, could further threaten wildlife, increase risks to safety, and create concern within local communities.

D. Hunting

Defenders indicated opposition to hunting given the risks to habitat, wildlife, and human safety.

Davenport North Coast Association

[ORG-DNCA]

A. RMPA/EA and CCNM

The Davenport North Coast Association (DNCA) conveyed that the RMPA/EA overall lacked information to adequately analyze impacts of the proposed uses, including a Preferred Alternative. Given the lack of available information, DNCA expressed concerns about adequate projections and planning/mitigating accordingly. DNCA called for the BLM to either conduct an EIS or revise the EA to include sufficient, comprehensive analyses and documentation to justify EA conclusions. DNCA identified specific examples in the RMPA/EA where information about potential impacts appeared lacking (e.g., climate change impacts under the conditions in the alternatives, detailed characterization of Monument resources, and alignment with existing plans and policies).

DNCA questioned how the proposed access and recreation activities align with the 2005 CCNM RMP goals (which does not mention public access or recreation), and if/what protections the National Conservation Lands designation affords C-CD over and above the protection of the rest of the CCNM or other BLM lands.

DNCA supported designating San Vicente, Liddell, and Laguna Creeks as Wild and Scenic Rivers as described in Alternatives B and C. DNCA indicated that such a designation is another reason to pursue an EIS.

DNCA stated the RMPA/EA did not adequately consider cumulative and synergistic impacts of the new public access activities nor adequately provide design considerations for mitigation. DNCA expressed concerns that the RMPA/EA did not quantify impacts due to lack of visitation use data and made unsupported assertions that certain effects were “negligible.” DNCA suggested several considerations, including public access impacts (on habitat, sensitive species, water resources, neighboring communities, neighboring private and public properties, and non-federal public safety services), climate change impacts, and defining baselines for evaluating impacts. Additionally, DNCA stated that ascertaining merits and drawbacks of the alternatives is difficult without a separate analysis for each alternative. DNCA called for the BLM to work around information gap challenges, describing how and when the BLM will address these information gaps.

B. Management, Planning, and Coordination

Given the mixed property ownership in the area, multiple policies and planning efforts, and opportunity to leverage resources, DNCA encouraged the BLM to establish a coordination framework with adjacent property owners and related management entities. DNCA offered specific approaches and considerations (e.g., Interagency Ecosystem Management Task Force [IEMTF] principles, specific coordination partners, and a notification process about RMPA implementation).

DNCA identified various planning efforts that the BLM should incorporate into the RMPA/EA, such as the Santa Cruz Coastal Reuse Plan for the CEMEX property and trail plans in the region. The CEMEX plan should be considered as Reasonably Foreseeable Future Action in the cumulative impacts analysis.

C. Lands and Realty

DNCA stated that it concurs with Santa Cruz County’s comment regarding opposition to acquisition of additional adjacent properties.

D. Water

DNCA shared concerns that public access water use on the property will reduce water available to neighboring communities and for supporting habitat and wildlife. DNCA stated the RMPA/EA does not adequately analyze and address future water supply concerns.

E. Habitat and Wildlife

DNCA expressed overall support for protecting natural plant and wildlife species and specific conservation provisions outlined in the Presidential Proclamation. For instance, DNCA

recommended the BLM adopt management actions for restoring naturally functioning riparian systems (in Alternatives B and C) and habitat restoration for special status species.

F. Emergency Services, Fire, and Security

DNCA recommended the RMPA/EA provide quantitative analyses of impacts on emergency services (e.g., fire readiness) and private property security on neighboring communities and properties, and provide mitigation actions. DNCA stated that while these may be administrative actions that do not fall under the purview of “planning activities,” local communities need a better understanding of these issues and proposed activities to address their concerns.

DNCA stated that fire risk prevention and protection is a top public safety priority. DNCA identified the wildland urban interface (WUI) areas as a major concern for communities and wildfire risk. DNCA said that the rural roads in the area (i.e., Warrenella Road and Bonny Doon Road) are not wide enough to serve as adequate fire breaks or allow access for suppression.

G. Vegetation Management

DNCA recommended using multiple vegetation management strategies to manage invasive species, reduce erosion, and minimize fire risk.

DNCA stated that herbicide use should be minimized and only used where necessary (e.g., enable other methods like mechanical removal, grazing and controlled burn to be more effective).

H. Agriculture and Grazing

DNCA stated that the RMPA/EA did not adequately analyze and offer mitigation measures for public access impacts on local agriculture operations near the property, including cumulative and synergistic impacts on neighboring agricultural operations.

DNCA expressed concerns about grazing activities impacting sensitive habitat and wildlife. DNCA supported grazing mitigation measures outlined in Alternatives B and C (e.g., fencing off springs and riparian areas).

I. Transportation, Parking, and Access

DNCA called for overall more information and quantitative analyses of the transportation system that evaluates local, off-property traffic and parking impacts, including the environmental consequences (e.g., air quality) of traffic degradation, and cumulative analysis including other foreseen actions. The final RMPA must provide for adequate mitigating measures coordinated with pertinent agencies.

DNCA was concerned that charging visitor use fees would lead to off-site parking. DNCA stated it would not support visitor use fees unless there was a multi-agency cooperation and enforcement plan to minimize public safety risks.

DNCA identified concerns and opposition with several of the proposed access points and parking options. DNCA stated the BLM should adequately analyze and address these traffic and safety concerns if these areas are included in the final RMPA/EA:

- **Swanton Road.** Potential impacts on Cal Fire responsiveness as the Big Creek Fire Station is on the same road.
- **Warrenella Road.** Narrow, steep, and tight curves in portions of the road could be dangerous and not suitable for RVs.
- **Bonny Doon Road.** Potentially dangerous road conditions (e.g., too narrow).
- **Cement Plant Road.** Poor road conditions, traffic accidents, and small community nearby.

DNCA proposed that the BLM consider the future redeveloped CEMEX site as an alternative to the Cement Plan Road access.

DNCA expressed concerns about potential crowding despite spreading visitor access and usage.

J. Recreation

DNCA in general supported mixed recreational use of trails by hikers, mountain bikers, and equestrians. DNCA identified specific uses or use limitations it did or did not support:

- Support segregation of hikers, bikers, and equestrians into different areas (although DNCA had concerns about how this will be enforced).
- Support closing bike and equestrian trails during wet periods to limit erosion and trail failure.
- Potential support for e-bikes (DNCA had monitoring and enforcement concerns given that San Vicente Redwoods does not allow e-bikes). Support for Class I e-bikes, but not Class II.
- Opposed to allowing camping due to wildfire risk and lack of site-specific information and analyses of impacts.
- Opposed to off-leash areas for dogs. DNCA had leash requirement enforcement concerns.

K. Hunting

DNCA expressed opposition to allowing hunting on any part of the property for any kind of game (with the exception for state/federal-directed management of invasive species) due to safety and wildlife impact concerns.

DNCA stated that the BLM should not enhance natural populations of deer, quail, or turkey through hunting.

L. Visual Resources

DNCA recommended including mitigation measures for visual impacts and using VRM Class II objectives over Class III to retain the landscape character. DNCA also recommended considering visual impacts from different vantage points (e.g., upper marine terraces).

M. Facilities Management

DNCA supported the daily garbage services and closed containers described in Appendix D and recommended adding these to Fish and Wildlife Management Actions. DNCA requested more information and mitigation measures to address concerns with other types of disposal and cleaning needs (e.g., abandoned cars, restroom cleaning/maintenance, and graffiti).

N. DNCA Proposed Preferred Alternative

The DNCA offered its preferred alternative, which was a hybrid “Northgate-Southgate” parking and trailhead concept to serve the northern section of the property directly off Highway 1. DNCA articulated that its preferred alternative was designed to meet several goals, including safe and adequate public access, mixed recreational use, protection of sensitive habitats, promotion of public safety and minimizing conflicts, assuming full protection of “objects” described in Proclamation 9563, fire risk prevention/ protection, future connectivity with San Vicente Redwoods, accommodation of Santa Cruz Coastal Reuse Plan, and eliminating/mitigating conflicts between local community and visitors. The DNCA preferred alternative included concepts summarized below, assuming adequate NEPA compliant analyses of all potential impacts occur:

- Adoption of the “Southgate” access and trail system for Recreation Management Zone 3, and addition of a “Northgate” parking/restroom/trailhead accessed directly from Highway 1 at mile 30.22
- Working with CalTrans to ensure adequate ingress and egress at a Southgate parking/restroom/trailhead and “Northgate” public trailhead facilities
- Implementation of improvements in two phases, with development of the Southgate access as Phase One and the Northgate access as Phase Two
- Eliminate the controversial proposed parking and trailheads at Swanton Road past Molino Creek, Warrenella Road Gate, and Warrenella Road “Top”
- Reducing the number of trailheads while still accommodating the maximum miles of trails in the future
- Future trail connectivity with the adjacent San Vicente Redwoods property from the Northgate trailhead; and future trail connectivity with the North Coast Rail Trail
- Northern sector trails located away from Warrenella Road and west of Agua Puerca Creek
- Provide mountain bike specific-directional descending trails and avoid the re-use of steep fire roads as trails, as they contribute disproportionately to erosion and injuries
- Guided tours, education, and research in RMZs 2 and 4
- Future North-South connectivity across the Cotoni-Coast Dairies National Monument following the conclusion of reclamation activities in RMZ 2; future connectivity from the “Northgate” trailhead to the future redeveloped CEMEX site with its visitor services and interpretive center, as well as the terminus of the North Coast Rail Trail
- Establish safe connectivity to the North Coast Rail Trail using a pedestrian/bicycle overpass over Route 1
- DNCA generally supports the recommendations of the Mountain Bikers of Santa Cruz’s “Official Position on the Draft Resource Management Plan for Cotoni-Coast Dairies” and particularly points 8-17, which include principles for the design and implementation of a multi-use trail system

Friends of Juristac

[ORG-FOJ]

A. Cultural and Historic Resources

Friends of Juristac encouraged the BLM to continue engaging the indigenous people (e.g., Amah Mutsun Tribal Band).

Friends of the North Coast

[ORG-FONC]

A. RMPA/EA

The Friends of the North Coast (FONC) identified RMPA/EA proposed activities that appeared inconsistent with regulations, policies, and restrictions (e.g., FLPMA, Presidential Proclamation 9563, National Landscape Conservation System, C-CD property deed restrictions, California Coastal Act, and Coastal Development Permit 3-11-025). For instance, FONC indicated that prioritizing recreational activities over the Monument's natural, cultural and biological resources is contrary to the Presidential Proclamation 9563. FONC also stated the proposed trails and uses are inconsistent with Secretarial Order 3308, because they fail to manage the monument as an integral part of the larger, surrounding landscape.

FONC conveyed that the RMPA/EA overall lacked information to adequately analyze impacts of the proposed uses and failed to foster informed decision-making and informed public participation. FONC identified specific examples where it viewed the EA as inadequate pursuant to NEPA (e.g., lacking a No Project Alternative and a proposed action, using inadequate baselines to evaluate impacts on resources and protected "objects," and deferring analysis of impacts of proposed management uses). FONC stated that Alternative A does not qualify as a "No Project" alternative, as it does not reflect current ongoing management of the Monument.

FONC included detailed information from subject-matter experts that further elaborated on issues that FONC recommended the BLM further analyze and address in an EIS (e.g., wildlife populations, special status species, biotic communities, sedimentation and erosion, noise impacts, cascading impacts of visitor use, agricultural operations, and herbicides). FONC articulated that due to the lack of information/analyses and proposed activities that may be inconsistent with existing policies and regulations, the draft RMPA/EA alternatives may significantly degrade the Monument and objects under Proclamation 9563 protection. Therefore, FONC called for the BLM to conduct an EIS to proceed with a management plan.

B. Agriculture and Grazing

FONC expressed concerns that the RMPA/EA does not adequately protect and preserve agricultural and grazing operations aligned with the intent of the Coastal Development Permit and deed restrictions. FONC indicated the EA did not adequately describe the value of agriculture and grazing (e.g., habitat connectivity and fire-prone vegetation reduction). FONC called for more analyses on how the proposed activities and uses may affect adjoining and nearby agricultural operations.

C. Vegetation Management and Herbicides

FONC stated the BLM's weed management strategy should emphasize working with natural ecological succession processes to foster establishment of more desirable species (e.g., sowing native plants in addition to weed removal and using insects as biological control options). FONC stated the RMPA should demonstrate BLM's commitment to using an integrated pest management (IPM) approach.

FONC expressed specific concerns about herbicide applications (particularly aerial spraying) that could affect nearby organic agricultural operations. Herbicides could also enter the water and be carried off-site, affecting agriculture, wildlife, etc. FONC indicated aerial herbicide applications

should be prohibited, and that herbicides applications should be used as a last resort in managing non-native weeds and that cultural methods should be prioritized over using synthetic pesticides.

D. Habitat, Plants, Wildlife, and Special Status Species

FONC stated components of the alternatives appear inconsistent with the California Coastal Act – many of the uses, trails, parking, etc. would disrupt environmentally sensitive habitat areas and these features do not appear to depend on threatened species and rare habitats.

FONC indicated the RMPA/EA did not set adequate baselines to assess watershed impacts to wildlife, plants, biotic communities, and wetlands (e.g., lack of species-specific wildlife surveys, missing sensitive plant species, and incomplete mapping of biological communities and wetlands/waterways). FONC called for baselines and additional analyses on a number of habitat and wildlife issues to evaluate impacts and implement adaptive management. These include impacts on the watershed/landscape as a whole, biotic communities and plant species, coastal zone wetlands, and corvids (e.g., crows) impacting endangered marbled murrelet. FONC called for more analyses particularly related to trails, parking, and associated visitors – analyze their impacts on special status species' habitat, and other wildlife habitat and movement.

E. Water

FONC commented the need for adequate baselines for analyzing impacts to water resources and the watershed. FONC raised specific concerns related to public access and use impacting water quality (e.g., sedimentation, erosion, and turbidity) needed for salmonid habitat.

F. Access Points, Trails, and Parking

FONC articulated concerns with several of the proposed access points, parking, and trail alignments, including:

- **Warrenella Top and Warrenella Road Gate.** Potentially impact biotic communities and plant species protected as “objects of the Monument.”
- **Bonny Doon Road.** Sensitive wetland and riparian habitat in the area.
- **Liddell Creek.** Sensitive wetland and riparian habitat in the area.
- **Molino Creek Gate.** Sensitive wetland and riparian habitat in the area.
- **Marina Ranch Gate.** Sensitive wetland and riparian habitat in the area.
- **Swanton Road Gate.** Safety concerns.
- **Cement Plant Road.** Safety concerns.

FONC recommend BLM consider a different access point at Mile Marker 30.22 as an alternative to Swanton and Cement Plant Roads.

G. Recreation

FONC commented the RMPA/EA did not sufficiently analyze recreational impacts, in part due to lack of information on proposed trails, parking, visitor numbers, uses, etc. and inadequate baselines. Therefore, an EIS is warranted.

FONC identified a number of activities that warrant further analyses and managed appropriately, including:

- **Bikes/e-Bikes.** Further analyze bike and e-bike impacts, particularly on habitat that wildlife currently use or move through those areas. FONC also said e-bikes should be considered a

motorized vehicle, and therefore prohibited according to the property deed restrictions and Presidential Proclamation 9563, superseding conflicting policies like Secretarial Order 3376.

- **Dogs.** Further analyze impacts dogs may have on habitat and wildlife, particularly habitat for special status species like the red-legged frogs. FONC expressed concerns about allowing dogs, on or off leash.

FONC presented its proposed alternative, which recommended activities that should be allowed, limited, or prohibited (e.g., no hunting, camping, or fire-making).

H. Hunting

FONC stated the RMPA/EA did not provide sufficient information or analyses on hunting impacts and identified several concerns including safety, habitat degradation, noise disturbance, and affected wildlife. FONC expressed support for San Vicente Redwood's hunting prohibition and opposed hunting on any portion of the property.

I. Noise

FONC called for setting baselines for existing noise conditions to adequately evaluate potential noise impacts of the various proposed facilities and uses. FONC expressed concerns that additional noise (e.g., from construction, dogs, hunting, crowds, etc.) could disturb both wildlife and neighboring communities.

J. FONC Proposed Preferred Alternative

FONC stated that the BLM should include an alternative that avoids most or all of the significant impacts raised in FONC's comments and recommended the BLM select FONC's alternative as the proposed action. FONC indicated the BLM should prepare an EIS addressing the concerns and issues raised in FONC's comments, identify a proposed action, and compare potential impacts with the proposed action and other alternatives. FONC offered detailed information and resources, including maps and other visuals. Several provisions were also derived from the San Vicente Redwoods Public Access Plan. Major components of FONC's preferred alternative are summarized below by topic:

General Management

- Management as unit of National Landscape Conservation System
- Compliance with California Coastal Act, 2012 Coastal Development Permit 3-11-035, and Deed Restrictions
- Access and usage not to exceed sufficiency of funding and personnel to fully implement, monitor, and enforce compliance with the RMPA.

Analyses and Monitoring

- Recognition that direct human impact on C-CD has been minimal for many decades
- Update of the existing conditions report
- Initial survey of biological resources.
- Conduct monitoring (biological and social variables, condition of access features, etc.) to inform adaptive management
- Publish science plan

Services

- Amenities and services to fully cover the 4 Ts = Traffic, Trauma (police, fire, and rescue needed), Toilets, and Trash

Agriculture/Grazing

- Management consistent with the protection and preservation of adjacent sustainable agricultural uses

Cultural and Historic Resources

- Management consistent with BLM's MOU with the Amah Mutsun.

Habitat and Wildlife

- Implement similar habitat and wildlife provisions outlined in the San Vicente Redwoods Public Access Plan (e.g., minimize access impacts to sensitive resources; monitor access features to inform adaptive management) and include additional standards (e.g., certain wetland delineation methods and thresholds for impacts on habitat and wildlife).
- Compliance with the recovery plans for the endangered Red-Legged Frog, Central California Coast Coho Salmon, and South-Central California Steelhead.

Vegetation Management

- Conduct targeted and prioritized weed control strategies
- Preclusion of aerial herbicide application

Recreation - Phased Implementation - Phases proceed upon demonstrated management success of the previous phase(s) with adequate transparency (e.g., independent monitoring and evaluation and publicly available reports)

- Phase 1: RMZ 3 - Access at Yellow Bank Creek; connectivity to the North Coast Rail-Trail; a pedestrian/bicycle overpass over State Highway One. Allowable activities include hiking and horseback only at Yellow Bank South and Cotoni Trail; hiking, biking, and horseback on Bonny Doon Loops and Yellow Bank North trails.
- Phase 2: RMZ 1 - Access via new Access Road at Mile Marker 30.22. No access to or over Warrenella Road/Gate or Swanton Road.
- Phase 3: RMZ 1- Potentially connect to San Vicente Redwoods trails.
- RMZ 2 and 4 - No access, use, or development allowed.

Recreation – Allowable Activities and Public Access Management

- Prohibited activities include: fire making, smoking, collecting, hunting or habitat manipulation, fishing, off-leash dogs, motorized dirt biking (including e-bikes), unauthorized trail building, rock climbing/rappelling, camping, and commercial uses.
- Implementation of a visitor registration system and special use permit system (with a maximum threshold of annual visitors).

Girls Rock Women's Mountain Biking

[ORG-GRWMB]

A. General Planning, Management, and Coordination

The Girls Rock Women's Mountain Biking (Girls Rock) indicated opportunities for collaboration as communities of mountain bikers and non-bikers are ready and willing to support trail stewardship.

B. Access, Trails, and Recreation

Girls Rock stated its interest in more biking access and opportunities and the organization's strong support for a responsibly built, sustainable trail system.

Mountain Bikers of Santa Cruz

[ORG-MBOSC]

A. General Planning, Management, and Coordination

The Mountain Bikes of Santa Cruz (MBOSC) frequently encouraged the BLM to collaborate with stakeholders, including neighboring property owners, land managers, communities, agencies, NGOs, and other local experts during planning phases (e.g., trail design) and management implementation (e.g., volunteer patrols). MBOSC indicated that partnerships will reduce BLM management and implementation costs as well as encourage public stewardship.

MBOSC suggested specific strategies to help expand and sustain the BLM's management capacity, including:

- **Parking Fees.** Charging for parking (including offering annual parking passes) as a means to establish a sustainable funding source for property management.
- **Volunteer Patrol.** Establishing a volunteer backcountry patrol to augment the BLM's ability to provide public safety and protect sensitive resources.

B. Lands and Realty

[Similar comment to [FORM_A-MTB](#) related to acquisition and easements.]

MBOSC suggested specific partnership opportunities (e.g., Trust for Public Lands). The organization stated that these acquisitions/easements enable greater flexibility to develop sustainable and logical trail arrangements, including alleviate impacts to specific areas of concern (e.g., Hwy 1, Swanton Rd, Cement Plant Rd, and Davenport).

C. Facilities Management

MBOSC suggested several parking facility amenities and services, including parking lots large enough to prevent overflow on local roads, bathroom, trash receptacles, regular bathroom and trash services, horse trailer parking with adequate staging space, seating/shade structures, and signage. The organization specifically indicated the four trailer parking spaces as proposed in the RMPA is inadequate.

D. Trails and Access Points

[Similar comments to [Form_A-MTB](#) related to total trail access, trail connection to San Vicente Redwoods, specific trail design at Bonny Doon Road, and trail connection to Rail Trail.]

MBOSC stated that trail design should prioritize maximizing access for all trail users and mitigating trail conflict potential, using today's best practices (e.g., BLM's Guidelines For A Quality User Experience, ADA accessible pathways, and educational opportunities on trails). MBOSC supported trail connectivity, including between east and west ends of the property and with neighboring properties (e.g., Rail Trail). However, MBOSC shared concerns about trails allowing a specific use(s) intersecting with a trail(s) that conflicts with that said use(s) (e.g., multi-use trail intersecting with restricted use).

MBOSC proposed specific access point alternatives:

- On the Trust for Public Lands property at Hwy 1 and Swanton Road
- Between Cement Plant and Swanton Roads (defined as "Northgate parking" by DNCA)

- MBOSC recommended the BLM create a trail alternative to Warrenella Road (including the connection from Molino Creek to Warrenella trailhead) due to safety concerns.

In addition to the trail design recommendations similarly stated in FORM_A-MTB, MBOSC proposed specific trail designs, including stacked loop trails south of Molino Creek, extended loop trails between Liddell and Yellow Bank Creeks, rerouted trail through the southern end of Sempervirens Fund's property, and modified trail from the second terrace to Molino Creek.

E. Recreation

[Similar comments to Form_A-MTB related multi-user activities, mountain bike directional trails, special use permits, and e-bikes.]

In addition to the similar comments in FORM_A-MTB, MBOSC proposed specific trail management tools for bikes, including designating multi-use trails as directional where appropriate and specifying that allowing Class I e-bikes is consistent with other parks that permit e-bikes locally.

Mountain Lion Foundation

[ORG-MLF]

A. Hunting

The Mountain Lion Foundation stated it opposed permitting hunting as described in the draft RMPA/EA due to potential impacts on mountain lions (e.g., by calling game species like turkeys, hunters may inadvertently lure mountain lions) and increased risk of human-mountain lion conflict. At a minimum, adequate signage should be provided that informs recreationists and hunters how to avoid conflicts with mountain lions and what to do if there is an encounter.

Public Lands Conservancy

[ORG-PLC]

A. General Planning, Management, and Coordination

The Public Lands Conservancy (PLC) expressed its support for the BLM to coordinate planning and management activities with numerous jurisdictions on and adjacent to the CCNM. PLC also conveyed support and encouragement for the BLM to conduct and continue inventory and monitoring programs that ensure the long-term health of the area.

B. Grazing

PLC expressed support for the minimal levels of grazing described in Alternative A. PLC recommended no expansion of grazing activities and to phase grazing out where appropriate due to resources concerns (e.g., water quality and endangered species).

C. Fire and Fuels

PLC stated its support for the BLM to reduce risks of catastrophic wildfire through a Wildland Fire Management Plan (e.g., use of fuel breaks). PLC specifically expressed support for prescribed burning, which provides both public safety and ecological health.

D. Vegetation Management

PLC conveyed general support for a comprehensive Weed Management Plan (similar to the approach described in Alternatives B and C) to combat invasive plant species. However, PLC stated its opposition to aerial/broadcast spraying of herbicides or pesticides.

E. Habitat and Wildlife

PLC encouraged the BLM to implement ecological restoration of any degraded areas.

F. Access and Trails

PLC stated its support for connecting C-CD trails with other properties, including with San Vicente Redwoods and the proposed Rail Trail.

G. Recreation

PLC expressed specific concerns with off-trail activities due to risks of harming resources (e.g., sensitive plant species and cultural resources), particularly when the BLM does not currently have comprehensive inventories of these resources on the property. Therefore, the organization stated it opposed off-trail hiking and dispersed camping.

H. Hunting

PLC conveyed its opposition to allowing recreational hunting and any habitat or wildlife enhancements for the purposes of promoting hunting. PLC said these activities are inconsistent with adjacent land uses and pose too high of a risk to wildlife, habitat, and public safety.

Peninsula Open Space Trust

[ORG-POST]

A. RMPA/EA and NEPA

The Peninsula Open Space Trust (POST) encouraged the BLM to investigate designating the San Vicente and other creeks as Wild and Scenic Rivers that will offer greater protections and help support recovery of native fish species and other aquatic species

B. General Planning, Management, and Coordination

POST called for the BLM to ensure an appropriate balance between recreation and resource protection by providing safe and sustainable opportunities for public recreation that make appropriate use of existing infrastructure, protect natural and cultural resources, and compliment neighboring and regional recreational resources.

C. Grazing

POST recommended specific strategies to reduce grazing impacts on wildlife and habitat (e.g., wildlife-friendly fencing, water management infrastructure, and managed cattle stocking levels).

D. Fire and Fuels

POST urged the BLM to prioritize and actively use natural land management tools to prevent catastrophic wildfires (e.g., reduce fuel loads).

E. Vegetation Management

POST indicated that selective use of herbicides for managing invasive species is an important management tool, but should be applied in a measured way and not through broadcast spraying.

F. Habitat and Wildlife

POST stated that the BLM should prioritize biodiversity conservation and threatened species recovery in all management actions and implementation decisions (e.g., protect core habitat and habitat connectivity). POST said it supported the creation of core fish and wildlife protection areas that will help ensure biodiversity conservation goals can be achieved more effectively and efficiently. POST questioned whether the RMZ boundaries align with these conservation goals.

G. Trails and Access

POST offered specific trail and access recommendations, including:

- **Warrenella Road.** Use only for property management and emergency services, not recreation
- **San Vicente Redwoods.** Design trail system to connect to SVR's trail system.
- **Quarry.** Design trails away from the quarry on San Vicente Redwoods property due to potential safety risks.

H. Recreation

POST identified conditions under which certain recreational activities can be allowed and balanced with natural and cultural resource conservation goals:

- **Trails.** In general, keep recreational activities to designated trails to avoid spread of invasive plants.
- **Camping.** Allow only in designated camp sites; consider seasonal camping to avoid dry and windy times of the year (i.e., higher fire risk conditions).
- **Campfire.** Prohibit campfires due to risk of unintentional ignitions.
- **Dogs.** Keep dogs on leash and not allowed in sensitive habitats.

Rural Bonny Doon Association

[ORG-RBDA]

A. RMPA/EA and CCNM

The Rural Boon Doon Association (RBDA) identified RMPA/EA proposed activities that appeared inconsistent with regulations, policies, and restrictions (e.g., FLPMA, Presidential Proclamation 9563, National Landscape Conservation System, C-CD property deed restrictions, California Coastal Act, and Coastal Development Permit 3-11-025). For instance, RBDA indicated that prioritizing recreational activities over the Monument's natural, cultural and biological resources is contrary to the Presidential Proclamation 9563. FONC also stated the proposed trails and uses are inconsistent with Secretarial Order 3308, because they fail to manage the monument as an integral part of the larger, surrounding landscape.

RBDA expressed concerns that the proposed alternatives in the draft RMPA/EA could significantly degrade Monument resources (e.g., the ecology, habitat, cultural and archeological resources, and historic vistas). RBDA stated the RMPA/EA overall lacked information to adequately analyze impacts of the proposed uses, including a Preferred Alternative. Given the lack of available information, RBDA expressed concerns about adequate projections and planning/ mitigating accordingly.

Additionally, RBDA said that Alternative A does not qualify as a “No Project” alternative, as it does not reflect current management.

RBDA stated that the draft RMPA/EA insufficiencies (e.g., lack of resource surveys, comprehensive impact analyses and a defined Preferred Alternative) conflict with NEPA requirements; RBDA called for the BLM to conduct an EIS before finalizing a management plan. RBDA indicated the EIS should include full resource surveys, comprehensive analyses of potential impacts (particularly cumulative impacts), mitigation measures, and evidence the BLM has the capacity to manage the property aligned with the proposed activities.

B. Habitat and Wildlife

RBDA stated components of the alternatives appear inconsistent with the California Coastal Act, as the proposed public access uses and development would disrupt environmentally sensitive habitat areas, and the EA does not provide adequate evidence it is compliant with the Coastal Act requirements.

RBDA indicated the RMPA/EA did not set adequate baselines to assess impacts habitat, wildlife, and special status species (e.g., water quality of salmonid habitat). RBDA called for baselines and additional analyses on a number of habitat and wildlife issues to evaluate impacts and implement adaptive management. RBDA called for more analyses particularly related to trails, parking, hunting and other recreational activities, and associated visitors, etc. The organization stated the BLM should study these impacts on wildlife, habitat, and adjacent lands.

C. Recreation

RBDA expressed concerns that some of the proposed allowed activities (e-bikes, off-leash dogs, camping, campfires, and hunting) conflict with San Vicente Redwoods, which could lead management conflicts (e.g., connecting trails with different allowable activities) and the need for additional enforcement.

RBDA shared concerns with a number of specific activities, including:

- **Dogs.** Concerned that off-leash dogs may be hazardous to birds, small animals, and other habitat and sensitive species. BLM should either prohibit off-leash dogs or adequately analyze their impacts, propose mitigation measures, and demonstrate sufficient capacity to enforce mitigation.
- **Bikes/e-Bikes.** RBDA said e-bikes should be considered a motorized vehicle, and therefore prohibited according to the property deed restrictions and Presidential Proclamation 9563, superseding conflicting policies like Secretarial Order 3376.

Hunting

RBDA identified several concerns including safety, noise disturbance, and affected wildlife. RBDA stated the RMPA/EA did not adequately evaluate or address how the BLM will mitigate these impacts.

Redwood Meadows Ranch Homeowners Association

[ORG-RMRHOA]

A. RMPA/EA

The Redwood Meadows Ranch Homeowners Association (RMRHOA) indicated the RMPA/EA overall lacked information to adequately analyze impacts of the proposed activities, particularly related to hunting and those that increase wildfire risk. Given the lack of available information, DNCA expressed concerns about adequate projections and planning/mitigating accordingly.

RMRHOA conveyed that the proposed public access and management are inconsistent with multiple policies and restrictions (e.g., Presidential Proclamation, National Landscape Conservation System, and the property deed restrictions). RMRHOA called for the BLM to better demonstrate the proposed public access is balanced and consistent with protection and preservation of the property's natural and cultural resources.

B. Vegetation Management

RMRHOA stated the BLM should exercise caution when applying herbicides/pesticides in general. The organization said it opposed aerial spraying of herbicides or pesticides due to the public health risks to nearby communities and C-CD visitors and potential negative impacts on agricultural operations and grazing cattle.

Fire and Fuels

RMRHOA identified wildlife as one of its greatest concerns and expressed support for management measures to reduce wildfire hazards (e.g., shaded fuel breaks and prescribed burning). The organization encouraged the BLM to manage recreation in a way that minimized wildfire risk (e.g., prohibit campfires, camping, and smoking).

Emergency Services and Security

RMRHOA requested robust monitoring and enforcement now and in the future and that it is appropriately modified in relationship to visitation numbers and to illegal activities.

C. Recreation

RMRHOA referenced the San Vicente Redwoods public access standards and encouraged the BLM to apply similar measures. For instance, activities and recreational uses that will not be allowed on the San Vicente Redwoods property through special use permits or under any circumstance include, but are not limited to, fire making, collecting, hunting, fishing, off-leash dogs, off-road vehicles or motorized dirt biking (including electric bikes), trail building and rock climbing, and rappelling.

RMRHOA expressed concern that the RMPA/EA did not include cumulative analyses for specific recreational activities like camping and campfires, which could significantly impact wildlife, neighbors, visitors, and wildfire risk).

RMRHOA requested that specific uses (i.e., hunting, camping, campfire, and smoking) be prohibited in the areas adjacent and around residential households, families, agricultural farms, schools, natural preserve areas, and businesses

D. Hunting

RMRHOA expressed opposition to allowing hunting on the property and to wildlife or habitat enhancements that promote hunting opportunities. The organization identified several public safety, noise disturbance, and habitat and wildlife concerns. RMRHOA stated that existing policies and regulations (e.g., Presidential Proclamation) do not support the proposed hunting on the property.

RMRHOA stated that the RMPA/EA lacked sufficient information about the proposed hunting activities (e.g., missing cumulative impact analyses on hunting) that should be adequately addressed before making a final determination related to the proposed alternatives.

San Andreas Land Conservancy

[ORG-SALC]

A. NEPA Processes and Content

The San Andreas Land Conservancy (SALC) indicated the proposed activities are inconsistent with property restrictions and previous discussions with the BLM (e.g., 2014 Grant Deed, 2016 Correction Grant Deed and 2003 Citizen Advisory Group meeting), and that the BLM is required to manage the property in a way that offers public access and recreation, but not at the expense of the property's natural resources, habitats, and wildlife. SALC called for the BLM to specifically address "the protection and preservation of natural resources, restoration of endangered species and their associated natural habitats" consistent with the grant deed restrictions, including how the BLM will implement these restrictions in perpetuity.

SALC expressed a desire for more public involvement opportunities, expressing dissatisfaction with the planning process limiting protest appeals to an 'in-house' Interior Board of Land Appeals. SALC conveyed that an EIS process allows for greater public involvement and transparency.

SALC indicated the BLM should analyze and develop appropriate management measures to address impacts of other projects in the region (e.g., San Vicente Redwoods' mountain bike track), and the growth inducing and cumulative impacts that the proposed developments may have on other projects and adjacent properties. The BLM should also describe how it will set and enforce rules and limitations on activities and ensure habitat protection.

B. Water Rights

SALC called for the RMPA to list, quantify, and identify the legal status of any and all diversions on the property (including BLM and third parties). SALC conveyed particular concerns with Liddell Creek and San Vicente Creek diversion points. SALC indicated the BLM should identify and quantify its water reserves, including water reserved for endangered species' recovery.

C. Habitat and Wildlife

SALC expressed concerns that user activities will reduce the quantity and quality of habitat and water necessary for native species. SALC also stated that the Presidential Proclamation excluded other ecologically important species (e.g., tule elk, beaver, spotted owl, marten and marbled murrelet) that should be reintroduced to the area.

SALC called for a mechanism and schedule for retiring the leases that are inconsistent with the protection and preservation of C-CD's natural resources or restoration of endangered species habitat (e.g., tule elk, a native grazer, to replace cattle).

D. Hunting

SALC conveyed its opposition to allowing hunting, citing concerns related to fire risk, safety, habitat, and endangered species.

Safe Ag Safe Schools

[ORG-SASS]

A. Vegetation Management

Safe Ag Safe Schools stated opposition to the use of synthetic herbicides and pesticides, particularly against aerial applications, as proposed in Alternative C. The organization expressed concerns that herbicides and pesticides could negatively impact water quality, riparian habitats, connecting marine habitats, adjacent communities, drinking water, streams, organic farms, etc. The organization encouraged the BLM to use other vegetation management options like manual means described in Alternative A and to develop an alternative pest management plan that omits using synthetic herbicides or pesticides.

South Bay Indigenous Solidarity

[ORG-SBIS]

A. General Planning, Management, and Coordination

The South Bay Indigenous Solidarity (SBIS) encouraged the BLM to consult and coordinate with the Amah Mutsun Tribal Band (AMTB) before implementing major projects (e.g., large-scale plantings or prescribed burns) to avoid negatively impacting cultural resources.

B. Cultural and Historic Resources

SBIS emphasized a need to protect cultural resources and protect the fundamental human rights of Tribes and expressed appreciation for the BLM's engagement with the Amah Mutsun Tribal Band as an advisory partner in the management of the C-CD property. Additional recommendations included:

- Conduct archaeological surveys and impact reports prior to any activities that might disturb the soil (e.g., large-scale planting of trees, plowing/discing soil, the creation of embankments, or conducting controlled burns). Utilize tribal monitors in addition to archaeological monitors when earth-disturbing activities take place.
- Voluntarily agree to temporarily halt projects that are opposed by Tribal partners, and offer stakeholders the opportunity to comment on such projects before those projects are allowed to proceed in a mitigated form, if at all.
- Allow the Amah Mutsun Tribal Band unrestricted access or set aside protected areas in the Monument in order to respectfully gather traditional materials and utilize sacred spaces for ceremony.

C. Fire and Fuels

SBIS conveyed general support for a prescribed burn program to reduce risk of catastrophic wildfire and support ecological health. SBIS recommended that before conducting prescribed burns, the

BLM should coordinate with the Amah Mutsun Tribal Band and its Land Stewardship Program to avoid unintentionally harming culturally sensitive areas.

D. Vegetation Management

SBIS stated its opposition to aerial spraying of herbicides or pesticides due to potential negative impacts on adjacent communities, C-CD visitors, water quality (including safe drinking water), and sensitive habitats.

E. Trails

SBIS stated its support for a phased approach to trail building to allow for careful monitoring and adaptive management where needed. SBIS expressed concerns with trail construction in general due to risks to impacting cultural resources and disrupting sensitive ecosystems. Therefore, SBIS preferred the lower trail mileage proposed in Alternative B unless or until the BLM can demonstrate sufficient capacity to manage a more extensive trail network.

F. Recreation

SBIS identified conditions under which specific recreational activities can be allowed and balanced with natural and cultural resource conservation goals:

- **Trails/Campgrounds.** In general, keep recreational activities to designated trails and campgrounds. Prohibit off-trail activities (i.e., no off-trail hiking or dispersed camping).
- **Camping.** Allow only in designated camp sites.
- **Campfire.** Prohibit campfires due to risk of unintentional ignitions.
- **Dogs.** Keep dogs on leash and confined to trails.
- **Fishing.** Support the BLM's prohibition of fishing to protect endangered species and discourage off-trail activities.

G. Hunting and Shooting

SBIS conveyed its opposition to allowing recreational hunting, shooting, and any habitat or wildlife enhancements for the purposes of promoting hunting. SBIS said these activities are inconsistent with adjacent land uses and the conservation priorities identified in monument proclamation. The organization said these activities pose too high of a risk to wildlife, habitat, cultural resources, and public safety.

Santa Cruz Climate Action Network

[ORG-SC_CAN]

The Santa Cruz Climate Action Network submitted a form letter ([Form Letter B, Environment](#)).

Santa Cruz County Horseman's Association

[ORG-SCC-HA]

A. General Planning, Management, and Coordination

The Santa Cruz County Horseman's Association (SCCHA) encouraged the BLM open public access through a phased approach to ensure components like trails are appropriate and are being used appropriately (e.g., San Vicente Redwoods public access plan).

SCCHA requested the BLM develop a plan to fund the monument in order to provide for trail maintenance, sanitation facilities, and law enforcement.

SCCHA suggested specific strategies to help expand and sustain the BLM's management capacity, including:

- **Parking Fees.** Charging for parking (including large group fees and annual parking passes) as a means to establish a sustainable funding source for property management.
- **Volunteer Patrol.** Establishing a volunteer wilderness patrol to augment the BLM's ability to provide public safety and protect sensitive resources.

B. Facilities Management

SCCHA suggested several parking facility amenities and services, including parking lots large enough to prevent overflow on local roads, water (for people, dogs, and horses), bathrooms, trash receptacles, regular bathroom and trash services, horse trailer parking with adequate staging space, seating/shade structures, and signage. The organization specifically requested five trailer parking spaces in each parking lot.

C. Access and Trails

SCCHA indicated its support for the trail plan described in Alternative C as it offered the most trail access. As previously mentioned, SCCHA supported for a phased approach to trails; SCCHA also requested a general larger buildout of trails. SCCHA supported connecting trails to neighboring properties such as San Vicente Redwoods.

SCCHA referenced and supported trail design and construction best practices that ORG-MBOSC articulated in its comment letter (e.g., methods to minimize disturbance to sensitive cultural, biological, and hydrological resources).

D. Recreation

SCCHA stated support for good access to all user groups and support the effort of other user groups advocating public access described in Alternative C. SCCHA conveyed support for multi-use trails, including offering single-use and uni-directional trails to minimize user conflicts. SCCHA requested that the BLM aim to provide equal miles for hikers and horses (which can be compatible on the same trails).

SCCHA suggested providing a large, fenced dog part for dogs to be off leash and require dogs to be on leash on trails.

E. Hunting

SCCHA stated it did not support hunting on the property as it seems contradictory to being good stewards of flora and fauna.

Santa Cruz County Farm Bureau

[ORG-SCCFB]

A. Agriculture and Grazing

The Santa Cruz County Farm Bureau (County Farm Bureau) expressed concerns that the draft RMPA/EA would not adequately protect or preserve agriculture and grazing operations. The County

Farm Bureau identified several statutes, policies, and legal requirements (e.g., Presidential Proclamation, California Coastal Act, and Coastal Development Permit 3-11-035) that offer protections for preserving current agriculture row crop production. The organization stated that the EA failed to identify and evaluate the impacts of the Alternatives on the local farming operations and grazing (e.g., drift or transport of herbicides onto nearby organic farms, trespassing, vandalism, and stress to grazing cattle) or articulate mitigation measures against impacts. The organization also requested the BLM further describe the benefits that agriculture and grazing offers (e.g., land connectivity and reducing vegetation wildfire fuels).

San Diego Mountain Bikers Association

[ORG-SDMBA]

A. Access and Recreational Activities

The San Diego Mountain Bikers Association (SDMBA) submitted comments similar to [FORM A-MTB](#) related to:

1. Multi-User Activities
2. Total Trail Access
3. Trail Connection to San Vicente Redwoods
4. Specific Trail Design (Bonny Doon Rd)
5. Mountain Bike Directional Trails
6. Trail Connection to Rail Trail
7. Special Use Permits
8. Acquisition/Easements
9. E-bikes

In addition to the comments similarly stated in [FORM A-MTB](#), SDMBA also expressed support for trail connectivity between east and west ends of the property.

Sempervirens Fund

[ORG-SF]

A. RMPA/EA

The Sempervirens Fund stated several statutes, policies, and legal requirements (e.g., Presidential Proclamation; Omnibus Public Lands Act; and BLM policies including Secretarial Order 3308, 2011 15-Year Strategic Plan, and policy manuals 6100 and 6220) dictate the property should be managed in a way that prioritizes conservation of its ecological, archeological, and cultural values over other uses, including recreation, within the National Conservation Lands.

B. General Management, Planning, and Coordination

Sempervirens Fund conveyed the C-CD property is important and unique in that it serves as an essential link, both for wildlife and recreation users, to other portions of the larger landscape, and requires substantial stakeholder coordination and engagement.

The organization urged the BLM to complete more thorough baseline inventories of natural and cultural resources prior to commencing any new recreational activity. BLM should also develop adaptive management criteria that outline the circumstances under which recreation uses might be limited or modified if deleterious impacts are observed. Adaptive management criteria and plans should be completed before new recreation is allowed.

C. Cultural and Historic Resources

Sempervirens Fund emphasized that the property be managed in ways that ensure the Native American resources are honored and preserved.

D. Fire and Fuels

Sempervirens Fund encouraged the BLM to develop a comprehensive wildfire plan in coordination with partners including CAL FIRE, local fire safe councils, and surrounding communities. The organization supported the proposed prescribed burning program to promote ecological health and reduce risk of catastrophic wildfire.

E. Vegetation Management

Sempervirens Fund opposed use of aerial herbicide spraying or other forms of broadcast distribution due to risks to habitats, water quality, and adjacent communities. Except for aerial spraying, the organization supported the BLM's overall Weed Management Plan proposed in Alternatives B and C, such as using natural management methods like cattle to reduce non-native vegetation.

F. Access Points and Trails

Sempervirens Fund urged the BLM to limit its trail footprint whenever possible and gather wildlife baseline data before trail buildout to limit impacts to wildlife. The organization stated it opposed the extensive trail buildout described in Alternative C unless the BLM demonstrated it has the capacity to manage the more extensive trail network. The organization supported using a phased approach for trail buildout so that impacts can be monitored and inform adaptive management.

Sempervirens Fund supported the BLM's regional trail network considerations with San Vicente Redwoods and others (e.g., Rail Trail).

The organization expressed concerns about trespassing and recommended against trails near San Vicente Redwoods where there is not a clearly planned connection (e.g., opposed to the proposed Agua Puerca Trail).

Sempervirens Fund shared specific safety concerns with the proposed Warrenella Road Access Point and recommended the BLM close Warrenella Road to all recreational uses and also route trails away from the road. The organization advised the BLM to use the road only for administrative or emergency services.

G. Recreation

To minimize visitors' impacts, Sempervirens Fund recommended recreation should only occur in concentrated and defined areas where the BLM has sufficient data to ensure that conflicts can be avoided.

The organization identified a number of activities that should be allowed, limited, or prohibited, including:

- **Access.** Limiting all recreation to established trails and campgrounds (i.e., no off-trail hiking).
- **Camping.** Opposed to campfires and dispersed camping. Consider limiting camping (e.g., seasonal limitations).

- **Dogs.** Opposed to allowing dogs being off leash. If dogs are allowed, dogs should be on leash and only on designated trails.

H. Hunting

Due to concerns about public safety and impacts to habitat and wildlife, Sempervirens Fund stated it opposed recreation hunting and any wildlife or habitat enhancement promoting hunting opportunities.

Save the Redwoods League

[ORG-SRL]

A. Vegetation Management

Save the Redwoods League stated that spraying herbicide by aerial application potentially threatens or compromises future efforts to protect natural resources on C-CD and San Vicente Redwoods properties.

B. Trails and Access Points

Save the Redwoods League expressed support for creating a regional trail network, including connecting to trails on the San Vicente Redwoods property.

The organization identified concerns with particular access points:

- **Molino Creek Trail.** Requesting modifications to the trail as described in Alternative A to better connect to the San Vicente Redwoods property.
- **Warrenella Road.** Safety concerns due to the narrow road. Ending the proposed trail at the San Vicente Redwoods property border risks trespassing onto the property that is not designated for public access.

C. Recreational Activities

Save the Redwoods League indicated there should be better alignment in allowable recreational activities between C-CD and San Vicente Redwoods (e.g., connected trails allow for the same uses).

The organization expressed general support for accommodating hiking, biking, and equestrian uses.

The organization shared concerns with allowing the following activities due to potential negative impacts to natural resources on both properties:

- Off-trail hiking or camping, even with special use permits
- Hiking with dogs off leash
- Paragliding or hang gliding
- E-bikes

D. Hunting

Save the Redwoods League recommended against allowing hunting on the property, citing public health and safety concerns, including potential risks to staff and contractors managing San Vicente Redwoods.

US Hang Gliding and Paragliding Association

[ORG-USHPA]

E. Hang Gliding / Paragliding

The US Hang Gliding and Paragliding Association addressed common concerns about allowing paragliding and hang gliding and offered several specific suggestions for safely allowing these activities (e.g., site scouting, pilots carry emergency equipment, and applying a phased approach for allowing activities).

3.3. FORM LETTERS

Overview

The BLM received two types of form letters – one focused on public access and recreational activities, including mountain biking [“Form Letter A” - FORM_A-MTB], and the other focused on natural resource and recreation/trail management issues [“Form Letter B” - FORM_B-ENV]. The exact wording of some of the form letters varied slightly, but the BLM reviewed them all to ensure the public comments are considered appropriately.

Form Letter A (MTB) - Author List

The BLM received 331 submittals for Form Letter A (omitting three duplicates). The following individuals submitted form letters focused on public access and recreational activities. 35 submittals were either anonymous, illegible, or did not provide a name. An [example of Form Letter A](#) follows the author list.

Jesus A.	Doug Bloom	Bryan Cobb
R. Adams	Jim Boardman	Maury Cohen
Chessa Adsit Morris	Tony G. Bommarito	John Cohn
Stephanie Aguiar	Troy Boone	Aaron Cole
Stian Alesandrini	Jason Borgen	Harry Cominos
David Allen	Gary Boulanger	Matt Conn
Jackson Allen	Peter Braun	Philip Cox
Matt Ammann	E. Brenner	Burke Culligan
Adam Anderson	Joaquin Bridges	Mary Kate Cunningham
Jeff Anderson	Guillaume Brivet	Emily D
Joel Atleinberg	Shannon Brockman	Steve D.
Andrew Bactzus	Brook Burley	Joseph David
Chris Baker	Tina Butler	Eve Davidson
Tony Ballard	Oscar C	Mark Davidson
Scott Bartlebaugh	Scott C	Lam Day
John Bartron	David Cameron	Nicholas Decker
Brier Basilko	Kristen Cameron	Ed Dee
Terrence Bauer	Jesus Campos	Michel Deloux
Alex Becker	Piet Canin	Hannah Dillard
Asa Becker	Dave Carbonell	Matt Disney
Bill Becker	Brent Carlson	Malanie Doty-Cohen
William Becker	Tarren Carter	Dean Dubbe
Robert Beckman	Nathan Cauffman	Paul Dubiel
Steffany Beddes	Brian Chapman	Zach Dunn
David Benterou	Dan Chen	Colin Duwe
Lyle Bergerson	Tony Chen	Robert Easthope
Sarah Bernanrdini	Kris Chopra	Andrew Ebberg
Daniel Biagiotti	Oscar Chorizo	Jennifer Eisele
Mary Bishop	Leslie Chow	Daniel Elenius
Matthew Blain	Judy Clayton	Bob Estes
Roland Blanton	Daniel Clemens	Mike Evans

Lori Fabris
Kyle Feldmann
Fernando Fernandez
Gabriel Flores Saiffe
Todd Ford
Chris Fox
Natasha Fraley
Sergio Fuentes Jr.
Ari Garabedian
Rob Gaukel
Stacy Geiken
Megan Gemelos
Steven Gemelos
Jesse Gibson
Ian Gillies
Kevin Glisson
Shelby Gol
Janice Golda
Daniel Gomez
Martin Gomez O.
Abel Gonzalez
Brian Gonzalez Ortiz
Ian Goodfellow
Kayla Graff
Benjamin Griffes
Kyle Gronin
Amber Gustafson
Curtis Hamm
Paul Haney/Brooke Elliot
Casey Hansen
Jim Hasenauer
Gary Hatcher
Kevin Hays
Lindsay Helmuth
Keith Henderson
Dale Hendsbee
Talia Hernandez
Carl Hettiger
Tyson Hill
Ryan Hoffman
Paul Hogan
Scott Holland
Chris Holmes
Veronica Hoover
Steve Horner
Matt Hornland

Colin Hughes
Dan Hughes
Jason Hughes
Kevin Ivey
Doug Jacobson
Michael Jordan
Michelle Kacy
Jen Karno
Travis Karrle
Pete Katsaros
Kirk Kaubish
Roger Kern
Jeffrey Kung
Mike Labbe
Tim Landeik
John Leckrone
Seong Lee
Emma Lepak
Jonah Lepak
Pam Linstedt
Ryan Loomis
Lindsey Loperena
Ted Lorek
Peter Lunk
Dylan MacDonald
Sieg Magenheimer
Jenifer Mandella
Rick Mathers
Brian McCarthy
Brent McCoy
Emily McKissock
Chris McNiff
Morgan Meredith
Isaac Merrill
Juan Meza
Nicole Miller
Jeffrey Mize
Rene Monroy
Doug Moore
Jamie Morgan
Tom Morgan
Harry Motro
Marin Muller
Caroline Murphy
Elana Nadel
Andre Nagel

Paul Neall
Michael Nelley
Amy Nelson
Nancy Newsom
G. Nichols
Ben Nielsen
Rob Nolan
Brendan O'Neill
Rick Ortenblad
Tobin Ortenblad
Edward Owen
Miguel Pacheco
David Palic
Scott Papola
John Parker
John Parsons
Justin Peck
Tim Peek
Tony Perkins
Kent Persson
Richard Petersen
Blair Peterson
Amy Phinn
Ryan Phinn
Monica Pielage
Arleen Pietrzak
Michael Pisano
Trent Poltronetti
Samantha Price
Ximena Prugue
Mike Pruitt
Paul Raffaeli
Michael Raider
Heather Raponi
Zebulah Rapp
Jonathan Reber
Bill Reno
Ruben Reyes
Jon Rhinehart
Donna Riggs
Gary Riggs
Darius Rike
Luis Rivera
Sara Roach
Mark Robb
Mary Anne Robb

Paul Roberts
Kent Robinett
Jenny Robinson
David Rocha
Charles Rogerson
Dirk Rohloff
Julie Rohloff
Mike Rolcik
Saffron Roohani Russo
Laura Rose
Graham Rosemary
Bill Russell
Robert Russo
Nicole Rutherford
Hayden Ryan
Triago Santos
Tom Schiess
Laura Schniedwind
Rich Schwerin
Rich Serten
Christopher Seruge
Sam Shaffer

Neil Silva
John Simmon
Diana Slater
Allison Smith
Justin Smith
Dustin Snider
Al Souza
Wyatt Starn
Ashley Starr
Cassie Steel
Joel Steinberg
Tanner Stinchfield
Krista Stivala
Manny Swan
Erik Swannack
Jou Takao
Emily Tatasciore
Coral Taylor
Antonio Thomas
Bryan Thompson
Robert Tidmore
Ray Tracy

Heather Troy
Jesus V.
Jonathan V.
Luis Valerio
Nathan Van Zandt
Dennis Vander Meer
Kees Vander Meer
Matthias Vitten
Topher Walters
Peter Wampler
Christine Weir
Isaac West
Matthew Wilbur
Gle Williams
Craig Wilson
Brent Wood
Luke Wroblewski
Peter Yee
Lisa Young
Andy
Mark

Form Letter A (MTB) - Example

[FORM_A-MTB]

SUBJECT: Request for Public Input on the Draft Cotoni-Coast Dairies Property Management Plan

BLM Central Coast Field Office,

Cotoni-Coast Dairies (CCD) is an area with both ecological and cultural importance, and has the potential for a healthy and sustainable trail network to serve the needs of local residents and visitors of the Santa Cruz Coast. As this project moves through the public comment phase of the planning process, I ask that your team consider the following recommendations on the specific alternatives provided:

1. Biking, hiking, and equestrian access is the key to providing the public with an immersive natural experience.
2. Of the three proposed alternatives, only Alternative C provides a minimum viable mileage of trails for a meaningful user experience.
3. The trail connection to San Vicente Redwoods should be prioritized as it provides a key regional connection.
4. Please consider extending the loops along Bonny Doon Road to the Northern extent of the property. This will allow for a safe alternative to walking and cycling on the busy Bonny

Doon Road. This would also provide access for Bonny Doon residents for future regional connections.

5. Consider providing mountain bike specific-directional descending trails. This will help to avoid the re-use of steep fire roads as trails since they contribute disproportionately to erosion and injuries.
6. Providing a connection to the North Coast segment of the Rail Trail should be prioritized to provide a key connection to Santa Cruz and to Davenport. This will help to encourage alternative transport for access to Cotoni-Coast Dairies.
7. Special use permits will provide for a variety of events and partnerships that can highlight the natural features and recreational potential of the property. Please include provisions for competitive events as well.
8. Consider acquisition of neighboring lands, or easements, from willing sellers that support C-CD objects and values or provide opportunities for public access to C-CD, consistent with resource management goals and objectives. Collaborate with local experts in trail design and construction to ensure locally appropriate, high quality, and low maintenance trail infrastructure.
9. E-bikes should be allowed on bike access trails in a manner consistent with BLM regulations.

Thanks for your consideration and for your work stewarding our public lands.

Form Letter B (ENV) - Author List

The BLM received 189 unique submittals for Form Letter B (omitting 13 supplemental/ duplicate submittals). The following individuals submitted form letters focused on natural resource and recreation/trail management issues. The exact wording of some of the form letters varied slightly, but the BLM reviewed them all to ensure the public comments are considered appropriately. An [example of Form Letter B](#) follows the author list.

Ed Aiken	Sandra Cohen	Sharon Hull
Jean Aiken	Ronit Corry	Suzanne Hume
Anna Akker	Caryn L. Cowin	Karen Jacques
Reed Alper	John Cremin	Navindra Jain
Allen Altman	Nicolette Czarrunchick	Joe Jordan
Judith S. Anderson	Cheyenne Daleiden	Willow Katz
Rosalind Andrews	Ashley Daniels	Susan Kauffman
Mark Anisman	Michael Dillon	Penny Khounta
Raymond Arent	Nancy L. Donahoe	Karen Kirschling
Julie Bannister	Coleen Douglas	Lindsay Knights
Thomas Batelly	Cynthia Dzendzel	Dennis Koski
Toni Bauer	Deborah Ebersold	Ed La Pointe
Kay Baum	Ros Edmonds	Tom Lawson
Abbie Bernstein	Eve Egan	Julia Lin
Dirk Beving	William Epstien	Chris Lish
Brandon Bible	Dave Fassler	Carol Long
Diane Bigler	James Feichtl	Steve Lustgarden
Jeri Bodemar	Mary Flodin	John R. Manning
Debora Bone	Jim Ford	Lynda Marín
Tracey Bonner	Alexander G Fordyce	Pat Marriott
Carol Bower Foote	Brett Garrett	Alice Martineau
David J. Boyer	Peter Gelblum	Susan Martinez
Joseph Braus	Argo Gherardi	Cynthia Mathews
Ralph Britton	Lois Goldfrank	Laura Mattos
Eva Brunner	June Graham	Barbara Mauk
Randall Brynsvold	Allan Greenberg	Bobbie Mayer
Neilson Buchanan	Jacquelyn Griffith	Ellen McCann
Waltraud Buckland	Maria Gritsch	Sandra McCann
Robert Burch	J. Barry Gurdin	Douglas McElwain
Leslie Burpo	Marie Haka	Sharon McGuire
Rewa Bush	Diana Hall	Quinn McLaughlin
Sam Butler	Michele A. Halligan	Philip McManus
Sheila Carrillo	Barbara Harper	Dan Melin
Jacqueline Cathcart	Terry Hawkins	Jan Merryweather
Susan Cavalieri	Kathlene Henry-Gorman	Liz Milazzo
John Charles	Freya Hermanson	Kendrick Miller
Don Chesterman	Nita Hertel	Julia Monahan
Rebecca Clark	Nancy Hiestand	Gailen Moore
Madeleine Clyde	Thomas D. Howell	Marcel E. Moran

Lizabeth Morell	Kenneth Sahm White	Glen Tepke
Pamela Morgan	Mark Salamon	Larry Thompson
Pam Newbury	Meg Sandow	Janet Tilp
Rae Newman	Lisa Schallop	Carolyn Trupti Israel
Eric Nylen	Peter Schubart	Elissa Wagner
Marion Odell	Janet Schwind	Marie Wakefield
Dave Olson	Kathryn Scott	Andrew Wallach
Satya Orion	Pauline Seales	Judy Ward
Anthony Owen	Marsha Seeley	Elizabeth Watts
Laurie Palmer	Lynda Sereno	A. Webb
Janet Parkins	Pete Shanks	Russell Weisz
Rex Payne	G. Silva	Janice Wilfing
Rachel Pfothhauer	Philip Simon	Craig Wilson
Charlotte Pirch	Torunn Sivesind	Rachel Wolf
Alice Polesky	Jeffrey Smedberg	Charles Wolfe
Reetta Raag	Judith Smith	Nanlouise Wolfe
Maxine Reneker	Robert Snyder	Dolores Wood
Wyndham Robertson III	Todd Snyder	Heather Woods
Lois Robin	David Spinner & Andrea	Teri Xirakis
Dorah Rosen Shuey	Kean	Teri Yazdi
Dennis Ruby	Deborah St. Julien	Jan Ysselstein
Linda Rudin	Ketury Stein	Aaron Zachmeier
Cahterine Rusmore	Faith Strailey	Antonette Zeiss
Steve Rutledge	Kristin Sullivan	
Roland Saher	John Teevan	

Form Letter B (ENV) - Example

[FORM_B-ENV]

[Numbers were added to the example form letter below to assist with tracking the BLM's responses.]

SUBJECT: Cotoni-Coast Dairies National Monument Draft Resource Management Plan Amendment and Associated Environmental Assessment

Dear Mr. Blom:

Please accept these comments on the draft Cotoni-Coast Dairies National Monument Resource Management Plan Amendment (RMPA) and Environmental Assessment (EA). [You may add an introduction of who you are and your connection with Cotoni-Coast Dairies National Monument] I care deeply about the future management of the Monument and encourage the Bureau of Land Management (BLM) to work cooperatively with all its partners to protect the natural and cultural resources of this important landscape. I appreciate this opportunity to comment and appreciate BLM's commitment to addressing the circumstances and values related to management of the public resources within the Monument.

There are several key issues that I am concerned about and several that I am supportive of that are presented in the three Alternatives comprising the draft RMPA and EA. My recommendations to the BLM are as follows:

Natural Resource Management

1. I oppose aerial spraying, an option proposed under Alternative C in the draft RMPA. Under no circumstances should BLM utilize broadcast spraying of herbicides or pesticides as proposed in Alternative C, due to its potential for negative impacts on adjacent communities and monument visitors, as well as on the monument's water quality, riparian habitats, and connecting marine habitats. The streams in this landscape provide the drinking water for the town of Davenport and the City of Santa Cruz; aerial spraying has the potential to contaminate this important water source.
2. I support BLM's Weed Management Plan presented in Alternatives B and C. Overall, BLM is proposing a comprehensive plan to combat invasive plant species across Cotoni-Coast Dairies which will greatly enhance the health and abundance of native species. However, I encourage BLM to act judiciously in using herbicides and pesticides to meet their weed management goals and reiterate my opposition to aerial spraying for reasons stated above.
3. I support BLM proposing to continue, and expand, its shaded fuel break projects along Warrenella Road and Bonny Doon Road to mitigate the risks of wildfire and keep surrounding communities safe.
4. I support a prescribed burning program on Cotoni-Coast Dairies as proposed in Alternatives B and C to promote ecological health and reduce the risk of catastrophic wildfire.
5. I oppose wildlife "enhancement" and any management efforts that artificially manipulate wildlife or habitat purely for the purposes of supporting game species that can be hunted. This has significant potential to impact and disrupt existing wildlife populations and vegetation communities and is inconsistent with the conservation priorities expressed in the monument proclamation.

Recreation and Trail Management

6. I oppose recreational hunting within Cotoni-Coast Dairies, an option presented in both Alternative B and C. I recognize that hunters have a legitimate place on other public lands and play a positive role in conservation in this country. Nevertheless, I strongly oppose hunting on Cotoni-Coast Dairies. The property is simply too small with too many people nearby for hunting to be done safely. Many people live directly adjacent to the property and there is a highway along one border of the monument. I am greatly concerned about the safety of other recreationists, neighbors, and drivers on Highway 1 and Bonny Doon Road. Hunting is inconsistent with adjacent land uses and places too great a stress on already sensitive wildlife populations.

7. I oppose off-trail hiking and dispersed camping. The monument proclamation documents the many sensitive and imperiled plant species on the monument. BLM has also acknowledged that they have not completed a thorough inventory of the property's cultural resources but they are expected to be significant. To help mitigate the impact of monument visitors on these cultural resources as well as on vulnerable species, recreation should only occur in concentrated and defined areas. We recommend all recreation be limited to established trails and campgrounds. In relation to this recommendation, I also encourage BLM to ban campfires in order to minimize potential wildfire ignition sources.
8. I oppose off-leash dogs. I do not support dogs off-leash or off-trail as this has a highly negative impact on wildlife, higher potential to spread invasive species, and can create significant conflicts with other recreational users.
9. I support the creation of a trail connection between Cotoni-Coast Dairies and San Vicente Redwoods (provided in both Alternative B and C) to facilitate the establishment of a regional trail network. Similarly, I appreciate the consideration BLM has shown to other possible regional trail connections, including the proposed Rail Trail. Collectively, these trail networks could provide a transformative set of recreation opportunities in this region.
10. I support a phased approach to trail building. It is important that the monument finally be opened to the public for recreational opportunities. However, this is a sensitive ecosystem. For that reason, I am pleased to see BLM proposing that public trails be constructed and opened in a phased approach so that impacts can be more carefully monitored and adaptive management can be applied where needed. For this same reason, I support the lower trail mileage proposed in Alternative B unless or until BLM can demonstrate it has the capacity to manage a more extensive trail network.
11. I support the prohibition on target shooting. I am pleased that target shooting is not included in the range of recreational activities being proposed. Because the monument is relatively small and there are many adjacent communities, this recreational activity would present a significant safety risk.
12. I support the prohibition on fishing. I agree that fishing is inappropriate on the monument, particularly given the presence of endangered anadromous fish like Coho and steelhead.

Thank you for this opportunity to comment on the draft Cotoni-Coast Dairies National Monument Resource Management Plan Amendment and Environmental Assessment.

Sincerely,
Your full name, address, and contact information

SECTION 4 | INDIVIDUAL COMMENTERS

The tables in this section list the individuals who submitted comments not associated with a particular agency, organization, or form letter. Individuals who indicated they are affiliated with a specific business / company are noted. While individuals often commented on multiple topics (in fact, many called for a sustainable balance among diverse interests), this section groups individuals by the primary issue mentioned in the comments. Excerpts from comments are also provided.

4.1 NEPA AND GENERAL MANAGEMENT/PLANNING

4.1.1 RMPA/EA Process and General Management/Planning

Comment Code	Commenter
IND-0053	C. Doll
IND-0122	Joel Kauffman
IND-0123	Emma Kelsey
IND-0142	Mark Lipson, Molino Creek Farm
IND-0196	Josto Puddu
IND-0210	Drew Rogers
IND-0219	Ken Sanford
IND-0267	Anita Webb
IND-0269	Janet Webb
IND-0275	Sarah Wise

Examples:

IND-0142: *The Cumulative Effects analysis is inadequate and constitutes a major defect of the Draft EA/RMPA. Recommendation: A full EIS should be conducted with greatly increased emphasis on cumulative effects and corresponding planning scenarios to mitigate these impacts.*

IND-0275: *I propose you provide an Environmental Impact Statement rather than an EA. Only an EIS will provide the info needed to manage the property and all associated environmental concerns effectively.*

IND-123: *I would like to voice my support of additional monitoring to occur before the implementation of any management plan... BLM should take clear direct monitoring action to adequately capture the current ecosystem landscape prior to trail construction. The way in which monitoring efforts are approached can directly influence the success of the resulting management actions.*

4.1.2 Non-NEPA or BLM Issues / Non-Substantive

Many comments raised concerns that are not environmental issues within the context of the National Environmental Policy Act (NEPA) or are outside the scope of the C-CD RMPA/EA because they are not under the authority or within the jurisdiction of the BLM.

Several comments lacked substantive input to inform the draft RMPA/EA review (e.g., expressed support or opposition for a particular alternative without additional discussion).

Comment Code	Commenter
IND-0286	Elizabeth
IND-0002	Ian Alper
IND-0005	Mike Anciaux
IND-0030	Ralph Britton
IND-0060	Linda Farnell
IND-0070	Jeff Fromberg
IND-0073	John Gamman
IND-0079	North G. Grueskin
IND-0080	Laura Gustoson
IND-0129	Bliss Kok
IND-0146	Thalia Lubin
IND-0160	Karla McNamara

Comment Code	Commenter
IND-0162	Michelle Mehlhorn
IND-0191	Sandi Pensinger
IND-0201	Robert Reed
IND-0216	Gary Ruppel
IND-0221	Linda Schauble
IND-0240	David Stull
IND-0243	Marie Takada
IND-0261	Lorie Wade
IND-0276	Lori Wolfson
IND-0283	John Zey
IND-0284	Pam Zimmerman
IND-0290	[Anonymous]

Examples:

IND-0070: *This monument must be preserved.*

IND-0276: *...I strongly urge a refuge instead with little or no human intervention. There's a new priority. Less is more.*

IND-0073: *Please register my comment on draft RMPA and EA; I prefer the No Project alternative.*

4.2 PRESERVATION OF RESOURCES AND LAND USES

Commenters frequently emphasized preserving natural, environmental, and cultural resources. BLM also received comments that highlighted a need to protect existing land uses, particularly organic agricultural operations.

Comment Code	Commenter
IND-0020	Linore Blackstone
IND-0025	Lorrie Bornstein
IND-0026	Stefanie Bourcier
IND-0031	Cassandra Brown
IND-0033	Colleen Cabot
IND-0036	Bruce Campbell
IND-0037	Louis Robert Chiaramonte, SBIS
IND-0038	Rose Erline Chiaramonte
IND-0040	Nicolas Cortez
IND-0041	Amy Courtney
IND-0045	Patricia L. Damron
IND-0054	Benny Drescher
IND-0055	D. Dryer
IND-0061	William Feiling
IND-0067	Patricia Jeanne Forrest
IND-0069	Linda Friedlander
IND-0075	Reed Geisreiter
IND-0083	Will Hale
IND-0090	Emma Hartung
IND-0102	Ed Hopkins
IND-0104	Thomas D. Howell
IND-0105	Andrew William Hubbs

Comment Code	Commenter
IND-0114	Jacqueline A. Jenkins
IND-0118	Jocelyn Kahn
IND-0120	Jen Karno
IND-0121	Pat Katsky
IND-0125	Tehmina Khan
IND-0127	Ilana King
IND-0139	Geri Lieby
IND-0143	Kirsten Liske
IND-0145	Donna Logan
IND-0148	Nancy Macallister
IND-0150	Joan MacDonald
IND-0151	T. Malven
IND-0163	Tom Melkonian
IND-0166	Joanna Miller
IND-0168	Jane Mio
IND-0172	Dennis Morton
IND-0177	Joe O'Brien
IND-0180	Kerri O'Neill
IND-0188	Jennifer Parks
IND-0200	Paul W. Rea
IND-0205	Melissa Cara Rigoli
IND-0209	Dee E. Roe

Comment Code	Commenter
IND-0226	Beth Sherman
IND-0236	Mike Splain
IND-0254	Christine Z. Tucker
IND-0257	Ellen Uhler
IND-0263	Joshua Walden
IND-0265	Kim T. Waterson
IND-0266	Jennifer Watson
IND-0273	Chris Wilmers

Examples:

IND-0168: *Choice A has to be applied to the Cotoni-Coast Dairies Natl. Monument, because it does justice to the unique and bio- diverse Natural Resources. It is of outmost importance that best management policies are developed, evaluated in depth to assure that thorough, well thought out policies are in place for the protection and conservation of the Cotoni-Coast Dairies Natl. Monument's fauna and flora. This approach is essential since the National Monument Proclamation mentions that attention needs to be given to [sensitive species and biotic groups/communities]*

IND-0025: *I am concerned in particular by the plans in B and C to use herbicides to control invasive species and the plan not only to allow hunting but to actually stock wildlife for the purposes of enhancing recreational hunting. ...I would like to think that our federal lands would remain as toxin free as possible to protect the public who will use them.*

IND-0037: *Because all natural resource management efforts have the potential to impact cultural resources, I urge BLM to ensure that archaeological surveys and impact reports are completed prior to any activities that might disturb the soil. This includes the large-scale planting of trees, plowing/discing soil, the creation of embankments, or conducting controlled burns. Tribal monitors should be utilized in addition to archaeological monitors when earth-disturbing activities take place.*

4.3 SERVICES AND FACILITIES – THE 4 T’S

Comment Code	Commenter
IND-0008	Robert Arko
IND-0013	Catherine Bayer
IND-0013	Cathy Bayer
IND-0017	Clint Biddle
IND-0022	Barrett Boanen, Swanton Berry Farm
IND-0023	Bud Bogle
IND-0050	Carren Dixon, Buttercup Cakes Farmhouse Frosting
IND-0057	Alison Edwards
IND-0058	Zoltan Egeresi
IND-0062	Maria Fernandez
IND-0066	Blu Forman
IND-0087	Colin Hannon
IND-0092	Michelle Henderson
IND-0096	Jan Hilkert
IND-0098	David Hodges
IND-0099	Eric Hoffman
IND-0119	Henry Kaiser
IND-0126	Glenn Kimmel
IND-0128	Kathy King
IND-0130	Marion Kok
IND-0133	Bob Landry
IND-0134	Paul Langen

Comment Code	Commenter
IND-0140	Michael Liguori
IND-0144	Roxanne Lo
IND-0156	Gale McCreary
IND-0157	Brian McElroy
IND-0158	John McKeon
IND-0159	Torauni N. McKinney
IND-0161	Jennifer McNulty
IND-0173	Carmen Mulholand
IND-0178	Maureen O'Connell
IND-0198	Kristen Raugust
IND-0206	Ellen Rinde
IND-0215	Mathers Rowley
IND-0223	Courtney Scruggs
IND-0224	Matisse Selman
IND-0235	Jeanne Smith
IND-0238	P. Dawn Stevens
IND-0251	Kay Todd
IND-0262	Patricia Walberg
IND-0268	Dennis Webb
IND-0274	Hannah Wilson-James
IND-0277	Rose Wood
IND-0282	Chela J. Zabin
IND-0295	[Anonymous]

Examples:

IND-0013: *There is not any plan for enforcement of the ‘rules’... there is no way for the BLM to know who goes into the wilderness and when they come out... there is no enforcement of littering, pollution, vandalism, people and animals going off trail...*

IND-0235: *The cost of enforcing regulations, including park boundaries, on these lands and protecting residents is quite large. Is there money available? As a resident living on the border of this proposed park I am very concerned for safety and security.*

IND-0251: *We know the reality of taking any action that would increase the risk of having a fire this area. There is limited fire protection with Cal Fire in Swanton and volunteers providing service from Davenport and Bonny Doon. In addition, medical response is a minimum of 30 minutes away. There is also limited to no cell reception throughout our area. It is very important that this reality be considered in any proposal that would greatly increase people coming into the North Coast area.*

IND-0268: *...the access point on Swanton Road is the most difficult to reach and would provide the least benefit to National Monument visitors. The Swanton Road site is dangerous to reach by car or bike, it isn’t served by the bus system, it doesn’t connect to the Santa Cruz Coastal Rail Trail or planned trails on San Vicente Redwoods, it will be the hardest for first responders to reach and it funnels traffic down a road that can barely handle the limited traffic that exists today, let alone the crowds that are going to be accessing the National Monument.*

4.4 PUBLIC ACCESS AND RECREATION

4.4.1 Educational Opportunities and Common Recreation (Hiking, Biking, and Equestrian Use)

Many commenters supported public access and encouraged fostering educational opportunities. Generally comments supported finding a balance that would allow for hiking, biking, and equestrian use. Other comments indicated they supported only one or two of the common activities (most often hiking and horseback riding) or expressed concerns with one or more of the common activities (most often biking).

Comment Code	Commenter
IND-0001	Jacob Albrecht
IND-0003	Timothy Alton
IND-0004	Christine Amber
IND-0006	Laura Marie Anderson
IND-0007	Manaj Apte
IND-0014	Garen Becker
IND-0015	Scott Bellecitti
IND-0016	Mike Bennett
IND-0027	Carla Braden
IND-0028	Mitch Bramlett
IND-0029	S. Briscoe
IND-0034	Rodney Cahill
IND-0035	John Caletti
IND-0039	Mark Conover
IND-0042	Jason Crandon
IND-0043	Mike Dahlberg
IND-0044	Susan Damon
IND-0046	Jeff Davdson
IND-0047	Casey Devonshire

Comment Code	Commenter
IND-0052	Lauren Dockendorf
IND-0056	Robert Easthope
IND-0059	Joe Fabris
IND-0063	James Fitzgerald
IND-0072	Alan Gale
IND-0078	Devon Goldsby
IND-0082	Joe Haberman
IND-0086	Garrett Hammack
IND-0088	Linda Harris
IND-0089	Russ Harris
IND-0091	George Haye
IND-0094	Jayne Hesley
IND-0095	DJ Higdon
IND-0100	Luke Holoubek
IND-0101	Kerstin Holster
IND-0103	Eliece Horton
IND-0106	Darren Huckle
IND-0107	Traci Hukill
IND-0109	Jesse Hull

Comment Code	Commenter
IND-0110	Emilee Hurley
IND-0111	Margaret A. Ingraham
IND-0112	Devon Jackson
IND-0115	Monica Jensen
IND-0117	Sarah Jordan, Girls Rock Board of Directors
IND-0131	Jan Koval
IND-0135	Denise M. Larsen
IND-0147	Michelle M.
IND-0149	Harrison MacDonald
IND-0152	Emily Marriott
IND-0154	Mike McCarthy
IND-0155	Travis McCort
IND-0164	Raymond Mendoza
IND-0165	Saris Mercanti, Ibis Cycles
IND-0167	Ryan Miller
IND-0169	Brian Monty
IND-0170	Alexis Morgan, Girls Rock Women's Mountain Biking
IND-0174	Erica Murphy
IND-0175	Syd Newson
IND-0176	Chris Northrup
IND-0185	Lindsay Overton
IND-0186	Don Palermini
IND-0189	Karissa Paxton
IND-0190	Chris Pearson
IND-0192	Evan Peterson

Comment Code	Commenter
IND-0193	Katy Pomatowski
IND-0195	Mike Pruitt
IND-0197	Yakeen Qawasmeh
IND-0199	Michael Rea
IND-0202	Steven Reeves
IND-0207	David Robinson, dave@therideguides.com
IND-0208	Justin Robinson
IND-0213	Mark Rooney
IND-0225	Renee Shepherd
IND-0229	Joel Shrock
IND-0230	Paul Shufflebotham
IND-0231	Heather Shupe
IND-0232	Ann Simonton
IND-0233	Oxo Slayer
IND-0237	Campbell Steers
IND-0239	Dimitry Struve
IND-0241	Loren Sunding
IND-0244	Charles Telesco
IND-0246	Catherine Thompson
IND-0248	Melissa Thompson
IND-0249	John Thornton
IND-0253	Nate Trumble
IND-0256	Andrea Turner
IND-0258	David Van Brink
IND-0259	Mike Vandeman
IND-0260	René Voss

Comment Code	Commenter
IND-0264	Collin Waledisol
IND-0270	Sam Weinstein
IND-0272	Patsy Wilkes
IND-0278	Todd Woodward
IND-0279	John Work
IND-0285	Chad
IND-0287	Maddie

Comment Code	Commenter
IND-0288	Michael
IND-0289	Mike
IND-0291	[Anonymous]
IND-0292	[Anonymous]
IND-0293	[Anonymous]
IND-0294	[Anonymous]

Examples:

IND-0088: *Particularly, I'd like to see challenging technical unidirectional mountain bike trails and MORE connectivity between the trail networks than option c.... Mountain biking has been a lifeline of exercise to get [those with injuries or joint issues] out into the natural world.*

IND-0107: *...Alternative C combines hiking, biking and horses on a majority of trails – not usually a good outcome for the horses, which are startled by the bikes.... A better option in my view is Alternative B, which offers a good amount of trail development, including a generous number of designated-use trail miles that separate mountain bikers from horses, and which does not feature hunting.*

IND-0225: *For example, there could be some bike-only one way trails many bikers go very fast and conflict with walkers and equestrians. At the same time, I definitely want to full development of trails for hikers and equestrians (both of which are very compatible in my long experience as both!). So perhaps a “separate but equal” trail plan needs to be looked at where necessary.*

IND-0258: *I'm personally excited by the future possibilities of Cotoni Coast Dairies and its development for recreational and educational activities. In particular, among the Trail choices, I naturally prefer (C), the most amount of trails. Even if we start with (B) and build out over time. One point though. Options B and C include only a single connection to the North Coast Rail Trail. It would be potentially valuable to include at least two, given the large extent of the Monument, and to further encourage non-car accessibility and creating route choices with variety.*

IND-0260: *I strongly urge the BLM not to allow mountain biking on any trails in the new monument, for the safety of visitors and natural resources. Also any e-bikes should be restricted to paved roads only.*

4.4.2 Hunting

A. Supportive of Hunting

Comment Code	Commenter
IND-0012	Debra Baker
IND-0018	Alexander C Birkhofer
IND-0081	Roger Haas
IND-0187	David Palm
IND-0203	Joshua Restad
IND-0250	Matthew Titchenal
IND-0255	Jeff Tucker

Examples:

IND-0250: *I recognize that hunting needs to be done in a sustainable and safe manner and am confident this can be achieved with the help of the California Department of Fish and Wildlife.... If it is determined that hunting with firearms will not be allowed, I ask that the BLM please consider at least allowing archery hunting on the land during the deer archery and general hunting season for Zone A.*

IND-0255: *I would like to see this property be available for hunting and other recreational activities. BLM property is traditionally available for hunting throughout the nation. Santa Cruz County is exceptionally limited on areas to hunt. For this reason I believe this BLM property should be allowed for this recreational activity. There are many other areas in Santa Cruz County used for hiking bike riding and horseback riding. I believe this property again should be used for hunting or allowed on team. I am personally and archery hunter And would be interested in discussing this as well.*

B. Opposed to Hunting

Comment Code	Commenter
IND-0009	Susan Arnold
IND-0010	Katherine Astromoff
IND-0011	Nicholas Astromoff
IND-0019	James Bishop
IND-0021	Susan Blake
IND-0024	Michael Bolte
IND-0032	Charles Bruffey
IND-0048	Daryl Dichek
IND-0049	Dan Dion
IND-0051	Daniel Dobson
IND-0064	Kevin Flynn, Sempervirens Fund
IND-0065	Alex Fordyce
IND-0068	Jan Freiwald
IND-0071	Alexander Gaguine
IND-0074	Fred Geiger
IND-0076	Lalita Godbole
IND-0077	Suhas A. Godbole
IND-0084	Joe Hall
IND-0085	Hilary Hamm
IND-0093	Jack Herman
IND-0097	Kirsten Hill
IND-0108	Douglas Hull
IND-0113	Karen Jackson
IND-0116	Ken Johnson
IND-0124	Susan Kent
IND-0132	Paul Krug

Comment Code	Commenter
IND-0136	George Leonard
IND-0137	Ross Levoy
IND-0138	Jocelyn Levy
IND-0141	Angela Lipanovich
IND-0153	Julie Mascarenhas
IND-0171	Joseph Morlan
IND-0179	Katherine O'Dea
IND-0181	Clay Olson
IND-0182	Jane Orbuch
IND-0183	Vivienne Orgel
IND-0184	Shawn Orgel-Olson
IND-0194	Ann Pomper
IND-0204	Donna Riggs
IND-0214	Tony Rostron
IND-0217	Saladin Sale
IND-0218	Kristen Sandel
IND-0220	Michael Schallop
IND-0222	Robert Schettino
IND-0227	Judi Sherman
IND-0228	Barry Shilman
IND-0234	Anthony Sloss
IND-0242	Ellen Sweeney
IND-0245	David Terrazas, Brereton Law Office
IND-0247	John Thompson
IND-0252	Michael Trionfetti
IND-0271	Jacqueline Wender

Comment Code	Commenter
IND-0280	Stephen Wyckoff
IND-0281	Jan Ysselstein

Examples:

IND-0182: ...I am concerned about Alternatives B and C that allow hunting. Hunting in an area with hikers, mountain bikers etc seems incompatible. I am not against hunting per se—as it makes sense in Central Valley Wetlands, but in a heavily recreated area—it just doesn't make sense from a public safety standpoint.

IND-0247: Of much greater concern to me is the possibility that hunting and shooting could be permitted on Monument property. Hunting and shooting are activities that are incompatible with other users, present a clear and present danger to hikers, bikers, horseback riders and neighbors, and that pose obvious threats to wildlife. Permitting hunting and shooting of guns on the property would be contrary to the primary objective of establishing the Monument, which is to conserve, protect and restore this still largely wild natural area. It also jeopardizes the safety and enjoyment of other users.



July 14, 2020

Mr. Ben Blom
Bureau of Land Management
940 2nd Avenue
Marina, CA 93933

FINAL Traffic Study for the Cotoni-Coast Dairies Project

Dear Mr. Blom;

As requested, W-Trans has evaluated traffic operation issues associated with the proposed Cotoni-Coast Dairies public access and recreation project to be located near Davenport in the County of Santa Cruz. We understand that there are three alternatives for trailhead parking locations which would all be accessed via intersections with State Route 1 at various locations. The focus of this investigation was to determine the extent of improvements needed at the various access alternative sites as well as to discuss potential traffic congestion due to the project. This letter includes the project description, trip generation of the proposed project alternatives, and an assessment of traffic facility needs as a result of the additional traffic expected to be generated by the project.

Project Description

The proposed Cotoni-Coast Dairies project would establish public access and recreation at the Cotoni-Coast unit of the California Coastal National Monument in the vicinity of the community of Davenport in the County of Santa Cruz. The 5,843-acre park would include hiking trails and lookouts, and potentially equestrian facilities. There are three project alternatives; each has different levels of activities and different points of access from State Route 1.

Alternative A would include minimal action, focusing on day-use hiking trails with the following two access points.

- Swanton Road Gate, accessible from Swanton Road east of Highway 1
- Liddell Creek, accessible from Bonny Doon Road east of Highway 1

Alternative B would include hiking, equestrian, and mountain biking in designated areas, and research and education opportunities with four access points, as follows.

- Warrenella Road – Gate, accessible from Cement Plant Road east of Highway 1
- Warrenella Road – Top, accessible from Warrenella Road east of Highway 1
- Yellow Bank Creek Gate, accessible from the existing Panther Beach parking lot west of Highway 1
- Marina Ranch Gate, accessible from Highway 1

Alternative C would further increase these opportunities and overall park activity and include these five access points.

- Swanton Road Gate, accessible from Swanton Road east of Highway 1
- Warrenella Road – Gate, accessible from Cement Plant Road east of Highway 1
- Warrenella Road – Top, accessible from Warrenella Road east of Highway 1
- Yellow Bank Creek Gate, accessible from the existing Panther Beach parking lot west of Highway 1
- Marina Ranch Gate, accessible from Highway 1

Project Vehicle Traffic Volumes

Trip Generation Based on Parking Lot Capacity

The anticipated vehicle trip generation for the proposed project was estimated using data from Appendix G of the *Cotoni-Coast Dairies California Coastal National Monument Draft Resource Management Plan Amendment and Environmental Assessment*, Bureau of Land Management, February 2020 (RMPA), with revisions as advised by Bureau of Land Management staff. The RMPA estimates that during a typical weekend day there would be 350 visitors for Alternative A, 700 visitors for Alternative B, and 1,500 visitors for Alternative C. The RMPA also estimates that 95 percent of visitors would drive in for Alternative A, and 65 percent for Alternatives B and C, with the remainder walking, hiking, or bicycling in using existing regional trails. For all three alternatives, the RMPA estimates 2.5 visitors per vehicle. For Alternatives A, B, and C, this translates to 133, 182, and 390 vehicles respectively during a typical weekend day. Doubling these to account for one vehicle generating two trips (one inbound and one outbound), the weekend daily trip generation would be 266, 364, and 780 vehicle trips per day for Alternatives A, B, and C, respectively.

The RMPA contains two key pieces of information that were used to estimate the peak hour trip generation: the estimated maximum number of parking spaces needed and the average parked duration for each visiting vehicle. For the estimated parking spaces, it is anticipated that Alternative A would require 40 spaces, Alternative B would require 80 spaces, and Alternative C would require 105 spaces. For all three alternatives, an average stay of two hours is anticipated for each vehicle.

To convert the parking spaces to vehicle trips, the parking spaces were first divided by the average stay per vehicle. If there are 40 spaces and each one turns over every 2 hours, then it is estimated that 20 of the spaces would turn over in one hour. This was then doubled to account for each turnover resulting in one inbound trip and one outbound trip. Applied to the 20 spaces that turned over, this results in 40 vehicles (total inbound and outbound) during the peak hour.

Data on the ratio of inbound and outbound trips was not provided in the RMPA. While the above analysis assumed an even split between inbound and outbound, this is only when applied on a daily basis. On an hourly basis, it cannot be assumed to be perfectly split, as certain hours will have more inbound trips and other hours will have more outbound trips. Inbound versus outbound ratio data was collected from the *Trip Generation Manual, 10th Edition*, Institute of Transportation Engineers, 2017. While the parks used in this data set are not of a similar size to the Cotoni-Coast Dairies project and therefore invalid for overall trip generation rates, the ratio of inbound and outbound trips would be similar regardless of park size. It was found that during the weekend midday peak hour, approximately 55 percent of trips were inbound and 45 percent were outbound.

This data was also used to compute the weekday p.m. peak hour trip generation, as weekday demand was not covered in the RMPA. The ITE *Trip Generation Manual* indicates that the weekday p.m. peak hour has approximately 39 percent of the traffic volumes of the weekend midday peak hour. Additionally, these trips were approximately 60 percent inbound and 40 percent outbound.

These calculations and sources are documented in Table 1.

Table 1 – Trip Generation Summary Based on Parking Lot Capacity

Calculation	Alternative			Source
	A	B	C	
Weekend Daily Trip Generation				
A. Weekend All-Day Visitors	350	700	1500	RMPA
B. Percent that Drive in	0.95	0.65	0.65	RMPA
C. Visitors per Vehicle	2.5	2.5	2.5	RMPA
D. Weekend All-Day Vehicles (A * B / C)	133	182	390	Calculation
E. Weekend All-Day Trip Generation (D * 2)	266	364	780	Calculation
Weekend Midday Peak Hour				
F. Parking Supply in Spaces	40	80	105	RMPA
G. Average Stay in Hours	2	2	2	RMPA
H. Parking Turnovers per Hour (F / G)	20	40	52.5	Calculation
I. Weekend Midday Peak Hour Trips (H * 2)	40	80	105	Calculation
J. Inbound Trips (I * 55%)	22	44	58	ITE
K. Outbound Trips (I * 45%)	18	36	47	ITE
Weekday PM Peak Hour				
L. Weekday PM Peak Hour Trips (I * 39%)	16	31	41	ITE
M. Inbound Trips (L * 40%)	6	12	16	ITE
N. Outbound Trips (L * 60%)	10	19	25	ITE

Note: RMPA = *Cotoni-Coast Dairies California Coastal National Monument Draft Resource Management Plan Amendment and Environmental Assessment*, Bureau of Land Management, February 2020; Calculation = value computed using formula in parentheses; ITE = data from the *Trip Generation Manual, 10th Edition*, Institute of Transportation Engineers, 2017, was used to compute the formula in parentheses

Trip Generation Based on Visitor Count

The trip generation was also assessed using the weekend all-day visitors from the RMPA as the basis rather than the anticipated parking demand from the RMPA. The key difference is that while both use the same methodology to compute the weekend daily trip generation, the parking lot basis starts with anticipated parking demand for the peak hour analysis, whereas the visitor basis uses ratios from the ITE *Trip Generation Manual, 10th Edition*, 2017, to convert daily trip generation to peak hour generation. Essentially, the weekend midday peak hour represents 14 percent of the total daily trips on a typical Saturday, and the weekday p.m. peak hour represents six percent of the same total Saturday trips. The process is summarized in Table 2 below.

Table 2 – Trip Generation Summary Based on Visitor Count

Calculation	Alternative			Source
	A	B	C	
Weekend Daily Trip Generation				
A. Weekend All-Day Visitors	350	700	1500	RMPA
B. Percent Drive-in	0.95	0.65	0.65	RMPA
C. Visitors per Vehicle	2.5	2.5	2.5	RMPA
D. Weekend All-Day Vehicles (A * B / C)	133	182	390	Calculation
E. Weekend All-Day Trip Generation (D * 2)	266	364	780	Calculation
Weekend Midday Peak Hour				
F. Weekend Midday Peak Hour Trips (E * 14%)	38	52	111	ITE
G. Inbound Trips (F * 55%)	21	29	61	ITE
H. Outbound Trips (F * 45%)	17	23	50	ITE
Weekday PM Peak Hour				
I. Weekday PM Peak Hour Trips (E * 6%)	15	20	44	ITE
J. Inbound Trips (I * 40%)	6	8	18	ITE
K. Outbound Trips (I * 60%)	9	12	26	ITE

Note: RMPA = *Cotoni-Coast Dairies California Coastal National Monument Draft Resource Management Plan Amendment and Environmental Assessment*, Bureau of Land Management, February 2020; Calculation = value computed using formula in parentheses; ITE = data from the *Trip Generation Manual, 10th Edition*, Institute of Transportation Engineers, 2017, was used to compute the formula in parentheses

Vehicle Trip Generation Findings

Trip generations from both the parking capacity and visitor count methodologies were compared, and the parking capacity method anticipates slightly higher peak hour volumes for Alternative A and Alternative B, whereas the visitor count method anticipates slightly higher peak hour volumes for Alternative C. To be conservative, the warrant analysis was conducted using the highest anticipated peak hour volume from either alternative, which is summarized below:

- The trips generated by each alternative for the weekend midday peak hour would include:
 - Alternative A – 40 vehicle trips
 - Alternative B – 80 vehicle trips
 - Alternative C – 111 vehicle trips
- The vehicle trips generated for the weekday p.m. peak hour would include:
 - Alternative A – 16 vehicle trips
 - Alternative B – 31 vehicle trips
 - Alternative C – 44 vehicle trips

Parking Lot Vehicle Trip Allocation

Through discussions with staff at the Bureau of Land Management staff and Land Trust of Santa Cruz County, approximate distributions of project generated traffic to each parking lot were developed. Proposed distributions and the resulting trip generation of each parking lot are included in Table 3.

Table 3 – Parking Lot Distribution and Trip Generation

Parking Lot	Alternative A Trips			Alternative B Trips			Alternative C Trips		
	Split	PM Peak	MD Peak	Split	PM Peak	MD Peak	Split	PM Peak	MD Peak
Swanton Rd Gate	50%	8	20				20%	9	22
Warrenella Rd - Gate				30%	9	24	15%	7	17
Warrenella Rd - Top				10%	4	8	5%	2	6
Liddell Creek at Bonny Doon Rd	50%	8	20						
Panther Beach				30%	9	24	30%	13	33
Marina Ranch Gate				30%	9	24	30%	13	33
TOTAL	100%	16	40	100%	31	80	100%	44	111

Notes: Split = the percentage of total trips estimated to travel to or from each parking lot; PM Peak = the weekday p.m. peak hour; MD Peak = the weekend midday peak hour

External Trip Distribution

The parking lot trip allocation analysis covers what proportion of drivers would use each parking lot, whereas the external trip distribution analysis focuses on where these trips are starting or ending within the region. Since the primary access to the project area is from Highway 1, the two proposed origin/destination directions are Highway 1 to/from the north of the project area, and Highway 1 to/from the south of the project area. Trips originating in the South Bay were assumed to primarily access the site via SR 17 and SR 1 to/from the south. The proposed distribution and resultant trips are summarized in Table 4.

Table 4 – External Trip Distribution

Direction	Weekday PM Peak Hour				Weekend Midday Peak Hour			
	Split	Trips by Alternative			Split	Trips by Alternative		
		A	B	C		A	B	C
Hwy 1 to/from the North	10%	2	3	4	30%	12	24	33
Hwy 1 to/from the South	90%	14	28	40	70%	28	56	78
TOTAL	100%	16	31	44	100%	40	80	111

For both distributions, the proximity to Santa Cruz and the SR 17 interchange to the south drives the assumption that the majority of trips would start or end to the south of the project area. It is assumed that this effect would be stronger during the weekday p.m. peak hour, when trips to regional parks may be shorter due to the workday.

Traffic Facility Needs

Public safety impacts and need for mitigation were examined for each alternative focusing on warrants for turn lanes, traffic control and adequacy of sight distance. Warrants for left- or right-turn lanes at the SR 1 intersections were completed using standard warrants based on volume and speed of traffic. Traffic control needs at the SR 1 intersections were assessed and the adequacy of driver sight distances at both the SR 1 intersections and trailhead parking lot access points were evaluated.

Turn Lane Warrant Analysis

The need for left-turn lanes was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as an update of the methodology developed by the Washington State Department of Transportation and published in the *Method For Prioritizing Intersection Improvements*, January 1997. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a left-turn pocket based on safety issues. Based on our research and discussions with Caltrans staff, this methodology is consistent with the *Guidelines for Reconstruction of Intersections*, August 1985, which was referenced in Section 405.2, Left-turn Channelization, of previous editions of the Caltrans *Highway Design Manual*, though this reference has been deleted from the most recent edition of this manual.

The need for a right-turn lane or taper was also evaluated based on criteria contained in the *Intersection Channelization Design Guide*. A right-turn lane would consist of a lane installed to the right of the travel lane and would be a minimum of ten feet wide, plus a shoulder where not adjacent to a curb. A right-turn taper is a shoulder area that gets progressively wider as the motorist drives toward the intersection. Both improvements are meant to provide an area for motorists turning right to move out of the traffic lane without impeding through traffic.

Existing Volumes

Traffic volumes were collected in the study area in October 2017 on a Saturday during a non-holiday weekend, as contained in the *North Coast Rail Trail EIR Transportation Impact Analysis*, Santa Cruz County Regional Transportation Commission, November 2018. The anticipated project volumes for each of the alternatives were applied to these volumes to test the applicability of turn lanes or tapers.

Alternative A

Warrants were assessed for the intersection of Highway 1/Swanton Road with the addition of the traffic generated by Alternative A. Under existing volumes with added project traffic from Alternative A, left-turn lanes, right-turn lanes or right-turn tapers would not be warranted at the intersection. It should be noted that Highway 1/Bonny Doon Road was not analyzed because it already includes left-turn lanes on Highway 1 and a right-turn taper.

Alternative B

For Alternative B, the warrants were assessed for the intersections of Highway 1 with Cement Plant Road (North), Panther Beach Parking Access, and the proposed Marina Ranch Driveway. Under existing volumes with Alternative B trips added, no turn lanes or tapers would be warranted for any of these intersections.

Alternative C

The warrants were assessed with Alternative C trips added for the intersections of Highway 1 with Swanton Ranch Road, Cement Plant Road (North), Panther Beach Parking Access, and the proposed Marina Ranch Driveway. Turn lanes or tapers would not be warranted for any of these intersections under existing volumes with the addition of Alternative C traffic.

Future Volumes

Data from the Association of Monterey Bay Governments (AMBAG) Regional Travel Demand Model (RTDM) indicates that traffic volumes on Highway 1 are anticipated to grow 23.3 percent from 2017 (the year existing volumes were collected) to 2040. This growth rate was applied to the 2017 volumes to generate anticipated future volumes for the year 2040. The anticipated trip generation volumes from each of the three alternatives was applied to these future volumes to determine if turn lanes or tapers would be warranted.

Alternative A

For Highway 1/Swanton Road, turns lanes and tapers would not be warranted under future volumes with the addition of traffic from Alternative A.

Alternative B

Turn lanes and tapers would not be warranted under future volumes with the addition of Alternative B traffic for Highway 1/Cement Plant Road (North) and the proposed Highway 1/Marina Ranch Driveway. However, a left-turn lane in the northbound direction would be warranted for Highway 1/Panther Beach Parking Access. To determine if this impact was specific to the addition of Alternative B traffic, the warrant was assessed with future volumes only without the addition of any project traffic. Under future volumes without Alternative B traffic, the northbound left-turn lane would not be warranted.

As the majority of project trips are anticipated to arrive from the south, traveling northbound on Highway 1, and as the Panther Beach Parking Access would be on west side of Highway 1, this would result in most inbound trips turning left from Highway 1. For the other parking areas that would be located on the east side of Highway 1, the majority of inbound trips would involve right turns which have higher warrant thresholds for turn lanes or tapers.

Alternative C

The addition of traffic that would be generated by Alternative C to future volumes would not warrant turn lanes or tapers at Highway 1/Swanton Ranch Road, Highway 1/Cement Plant Road (North), or the proposed Highway 1/Marina Ranch Driveway. As noted above, turn lanes and tapers would not be warranted for Highway 1/Panther Beach Parking Access under future volumes without project traffic from any of the alternatives. However, the addition of traffic anticipated to be generated by Alternative C would result in a northbound left-turn lane being warranted for Highway 1/Panther Beach Access.

Copies of the turn lane warrant worksheets are enclosed.

Traffic Control Needs

All the intersections on Highway 1 which would provide access to the alternative trailhead locations are currently uncontrolled, with free flow on Highway 1 and stop controls on the side streets. Because of the limitation of data and inability to collect new data due to the COVID-19 pandemic and associated Shelter in Place orders, the need for changes in the traffic control, such as a traffic signal, was determined for the Highway 1 intersection with the highest volume of side street traffic, which is at Bonny Doon Road. Currently, there are 69 peak hour vehicles approaching Highway 1 from Bonny Doon Road. With the addition of the maximum volume of project traffic expected at any of the access locations, the side street volume would increase to approximately 85 westbound entering vehicles with Alternative A. These volumes were assessed versus the peak hour signal warrant from Chapter 4 of the *California Manual on Uniform Traffic Control Devices, Revision 4*, Caltrans, 2019. With the addition of Alternative A traffic to existing volumes, the volumes entering the intersection would not be sufficient to warrant the installation of a traffic signal.

The growth in traffic volumes in the study area anticipated by the AMBAG RTDM for 2040 would result in a signal being warranted for Highway 1/Bonny Doon Road per the peak hour signal warrant. The addition of traffic that would be generated by Alternative A would continue to warrant this signal. It is noted that while a signal would be warranted for Highway 1/Bonny Doon Road for future plus Alternative A volumes, it would still be warranted without the addition of project traffic to future volumes as the project background traffic growth is significantly higher than the project traffic volumes.

A copy of the peak hour traffic signal warrant analysis for Highway 1/Bonny Doon Road is enclosed.

Sight Distance

A field visit was conducted in April 2020 to measure the sight distance available for drivers departing each of the planned parking areas above, except Warrenella Road – Top, which was not accessible to the public at the time of the visit. Additionally, the sight distances for traffic entering Highway 1 was measured from Swanton Road, Cement Plant Road, and Bonny Doon Road.

Sight distances for these driveways and intersections were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance at intersections of public streets is based on corner sight distances, while recommended sight distances for minor street approaches that are either a private road or a driveway are based on stopping sight distance. Both use the approach travel speeds as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street. Table 5 summarizes the minimum sight distance requirements.

Table 5 – Intersection Sight Distance Criteria

Speed	Public Road Minor Approach Corner Sight Distance	Private Road and Rural Driveway Stopping Sight Distance
25 mph	275 feet	150 feet
30 mph	330 feet	200 feet
35 mph	385 feet	250 feet
40 mph	440 feet	300 feet
45 mph	495 feet	360 feet
50 mph	550 feet	430 feet
55 mph	605 feet	500 feet

Source: *Highway Design Manual*, 6th Edition, California Department of Transportation, 2017

Following are the results of the sight distance inventory, in order from south to north.

The proposed Marina Ranch Gate is approximately 1.3 miles south of Bonny Doon Road on Highway 1. At this location, the speed limit on Highway 1 is 55 miles per hour (mph) and the required sight distance is 500 feet. As sight lines in excess of 500 feet were established in both directions on Highway 1, sight distance for this location is acceptable.

The Liddell Creek parking area would be accessed from Bonny Doon Road. At Highway 1/Bonny Doon Road, the speed limit is 55 mph and the required sight distance is 605 feet as Bonny Doon Road is a public road. Acceptable sight distance in excess of 605 feet was measured during the field visit in both directions on Highway 1.

From the Liddell Creek parking area itself, sight distance was measured as 310 feet to the south. Speeds of several northbound vehicles were measured; all were traveling under 40 mph. At 40 mph, a sight distance of 300 feet is required. Therefore, sight distance to the south is sufficient. To the north, sight distance was measured as 250 feet. Speeds of several southbound vehicles were measured and all were traveling at speeds between 30 and 40 mph. As 40 mph requires 300 feet of sight distance but only 250 is available, the available sight distance to the north is insufficient. It is recommended that either the driveway be moved to allow at least 300 feet of sight distance in each direction, or sight lines of at least 300 feet to the north be established through clearing vegetation along the red arrow depicted in Plate 1. It is important to note that this only affects Alternative A as the other two alternatives do not include a parking area at Liddell Creek.



Plate 1 Liddell Creek Parking Exit Sight Distance to North (Source: Google Earth)

The Warrenella Road parking lots would be accessed from Cement Plant Road, which has two public connections to Highway 1. Project traffic would likely use the north connection as it is closer to the site, but both were measured for sight distance. At Highway 1/Cement Plant Road (South), the posted speed limit is 40 mph which requires 440 of sight distance for the minor approach from a public road. Sight lines in excess of 500 feet were established in both directions, therefore sight distance at this location is acceptable.

At the other connection of Highway 1/Cement Plant Road (North), the posted speed limit is 55 mph, requiring 605 feet of sight distance; sight lines of at least 605 feet were established during the field visit.

The proposed Warrenella Road – Gate parking area would be accessed from Cement Plant Road approximately 250 feet north of Cement Plant Road/Warrenella Road. At this location, sight distance was measured as 250 feet to the north and 350 feet to the south. There is no speed limit posted, but the *prima facie* speed limit is 55 mph. A *prima facie* speed limit is one that applies when there are no other speed limits posted, which in California is typically 55 mph for a two-lane undivided roadway outside of a residential, business, or school district.

However, 55 mph is not reasonable in this location given the alignment, visibility, and geometry of Cement Plan Road in the vicinity of the proposed Warrenella Road – Gate parking area. Most drivers would be more comfortable traveling at 15 to 20 mph although 25 mph is assumed to be more conservative. At 25 mph, the sight distance required is 150 feet, therefore sight distance in this location is acceptable.

The speed limit on Highway 1 in the vicinity of Swanton Road is 55 mph, requiring 605 feet of sight distance for drivers approaching from this minor public road. As sight lines in excess of 605 feet were measured, the sight distance for this location is adequate.

At the proposed Swanton Road Gate, sight distance in excess of 500 feet was measured to the north, and 310 feet to the south. A speed limit was not posted and there were too few vehicles during the field visit to assess prevailing speeds, but the sight distance is adequate provided that the prevailing speed is 40 mph or slower.

Sight Distance Findings

- The available sight distances of most of the parking areas and access to Highway 1 was measured and generally were acceptable.
- The only location that has insufficient sight distance is the Liddell Creek parking area on Bonny Doon Road, where sight distance to the north is less than required. The parking exit driveway should be moved to a more suitable location, or vegetation cleared in order to provide at least 300 feet of sight distance.

Conclusions and Recommendations

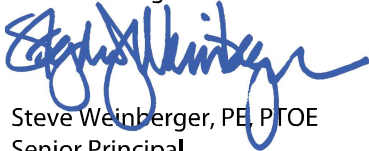
- Vehicle trip generation was determined based on data from the RMPA and ITE *Trip Generation Manual*. It is estimated that during the weekday p.m. peak hour Alternatives A, B, and C would respectively generate 16, 31, and 44 trips. For the weekend midday peak hour, this would be 40, 80, and 111 trips, respectively.
- These volumes were added to existing volumes for each location on Highway 1 where an intersecting road or driveway would carry project traffic for each of the three alternatives. It was found that left-turn lanes, right-turn lanes, and right-turn tapers would not be warranted for any of the alternatives under volumes resulting from adding project trips to existing volumes.
- Future volumes were determined using the anticipated growth rate to 2040 from the AMBAG RTDM. Under these future volumes, turn lanes and tapers would continue to not be warranted for the study intersections. However, a northbound left-turn lane would be warranted for Highway 1/Panther Beach Parking Access with the addition of Alternative B or C traffic to the future volumes. It is noted that the Panther Beach parking area uniquely would be on the west side of Highway 1, whereas the other study parking areas would be on the east side.
- The peak hour traffic signal warrant was assessed for volumes at Highway 1/Bonny Doon Road as Bonny Doon Road has the highest traffic volume of any road intersecting Highway 1 that would carry project traffic. With the addition of the maximum expected traffic generated by the project at any of the access locations, a traffic signal would not be warranted for existing volumes with the addition of Alternative A traffic. It was found that a signal would be warranted for this location under future volumes without or with the addition of Alternative A traffic.
- Sight distance was assessed for each proposed parking area driveway and where public roadways that would be used by project traffic intersect with Highway 1, except for the Warrenella Road – Top parking area as it was inaccessible at the time of this study. All locations have adequate sight distance in both directions, except the Liddell Creek parking area on Bonny Doon Road. For this location, it is recommended that the parking lot connection be moved or that vegetation be cleared such that sufficient sight distance is achieved. This only affects Alternative A, as Alternatives B and C do not include a parking area at Liddell Creek.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,



Kevin Carstens, PE
Associate Engineer



Steve Weinberger, PE, PTOE
Senior Principal



SJW/krc/SZX014.L1

Enclosures: Turn Lane Warrant Worksheets, Peak Hour Signal Warrant Worksheets

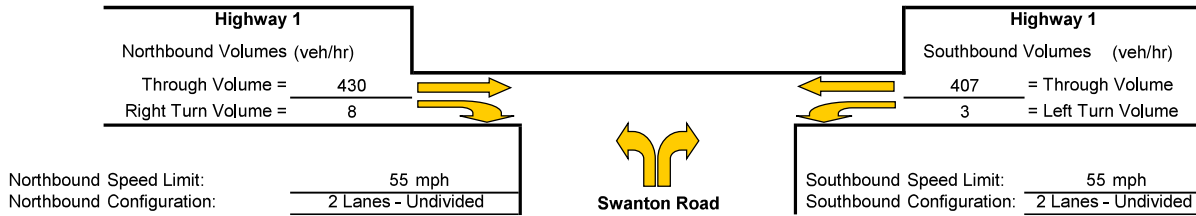
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Swanton Road

Study Scenario: Weekend Midday - Existing plus Alternative A

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 438
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 438
If $AV < Va$ then warrant is met -

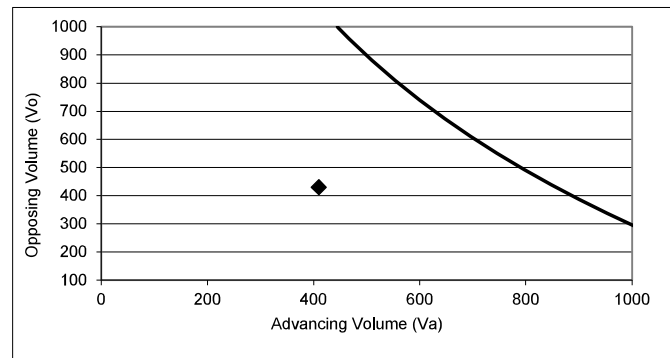
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 0.7 %

Advancing Volume Threshold AV 857 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroorty in 1991.

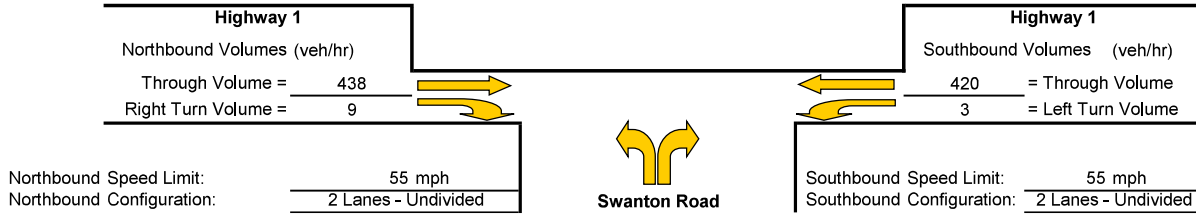
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Swanton Road

Study Scenario: Weekend MIDDAY - Existing plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
 Advancing Volume Va = 447
 If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
 Advancing Volume Va = 447
 If $AV < Va$ then warrant is met -

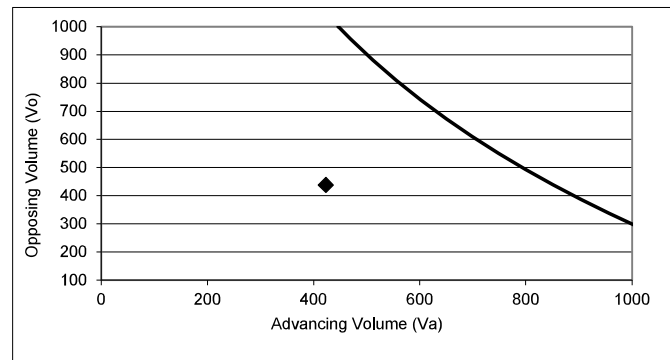
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 0.7 %

Advancing Volume Threshold AV 852 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroorty in 1991.

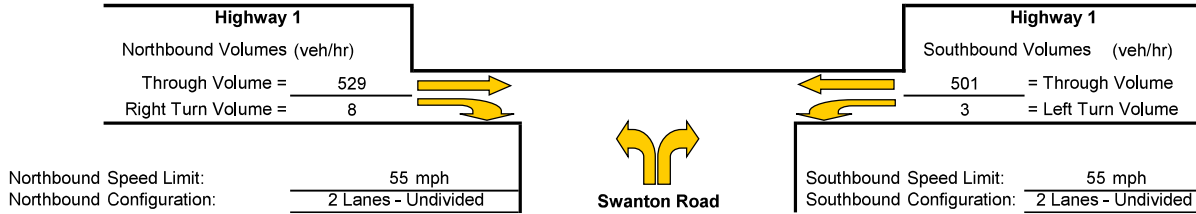
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Swanton Road

Study Scenario: Weekend Midday - Future plus Alternative A

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 537
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 537
If $AV < Va$ then warrant is met -

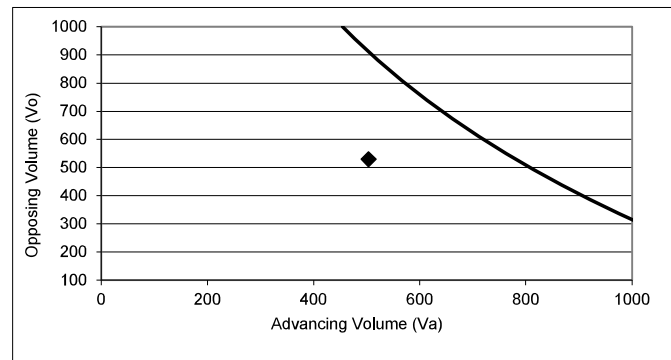
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 0.6 %

Advancing Volume Threshold AV 782 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

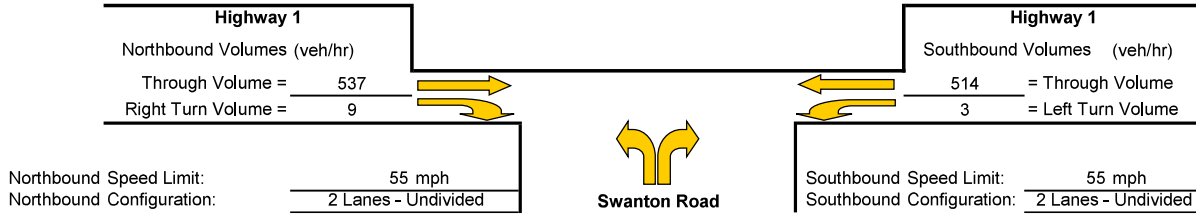
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Swanton Road

Study Scenario: Weekend Midday - Future plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 546
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 546
If $AV < Va$ then warrant is met -

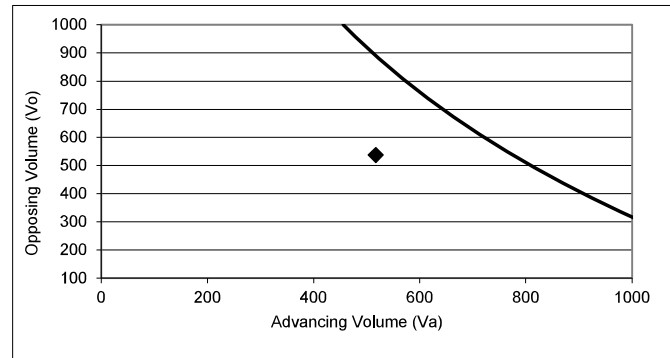
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 0.6 %

Advancing Volume Threshold AV 776 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

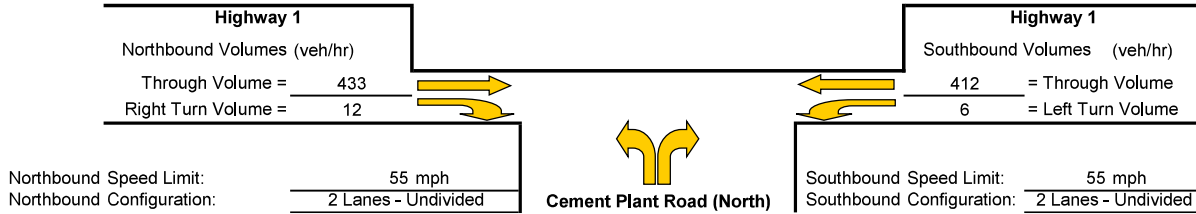
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Cement Plant Road (North)

Study Scenario: Weekend MIDDAY - Existing plus Alternative B

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
 Advancing Volume Va = 445
 If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
 Advancing Volume Va = 445
 If $AV < Va$ then warrant is met -

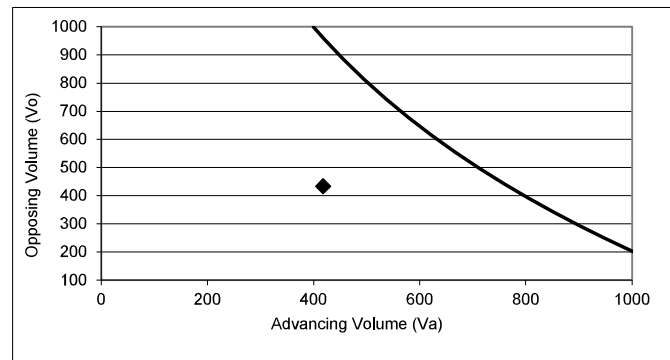
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 1.4 %

Advancing Volume Threshold AV 767 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroorty in 1991.

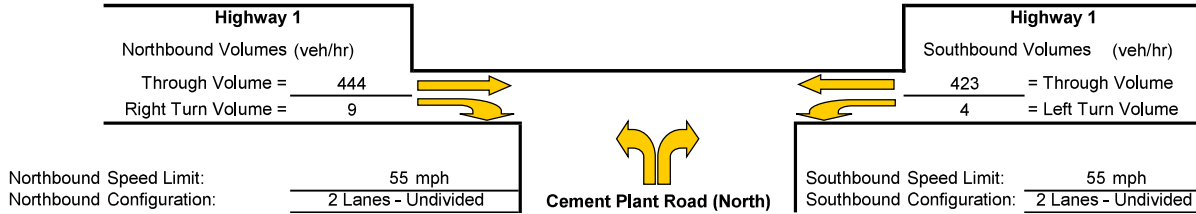
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Cement Plant Road (North)

Study Scenario: Weekend MIDDAY - Existing plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -

Advancing Volume Va = 453

If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -

Advancing Volume Va = 453

If $AV < Va$ then warrant is met -

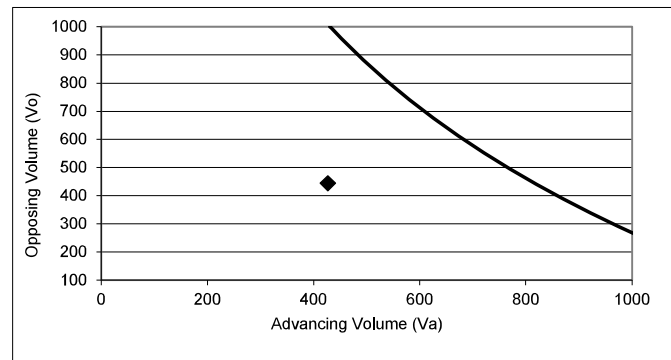
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 0.9 %

Advancing Volume Threshold AV 817 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

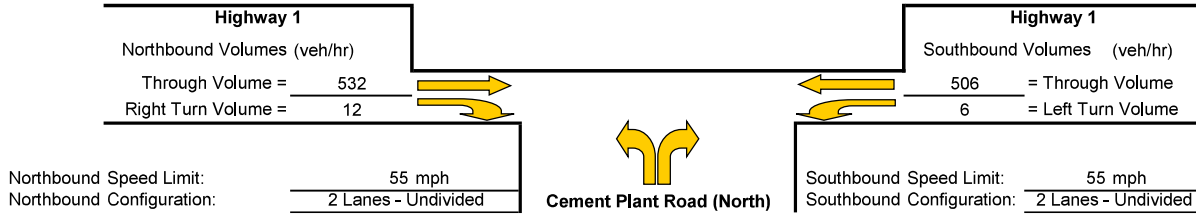
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Cement Plant Road (North)

Study Scenario: Weekend Midday - Future plus Alternative B

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
 Advancing Volume Va = 544
 If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
 Advancing Volume Va = 544
 If $AV < Va$ then warrant is met -

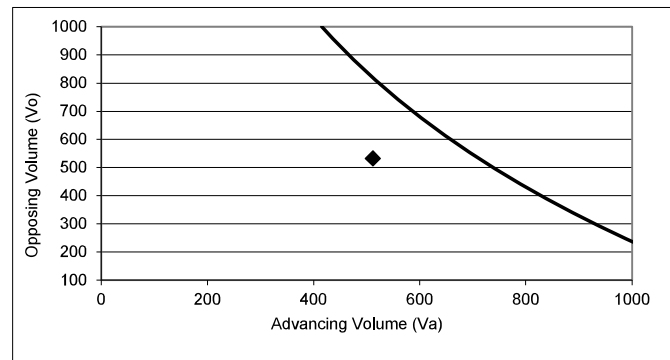
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 1.2 %

Advancing Volume Threshold AV 712 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

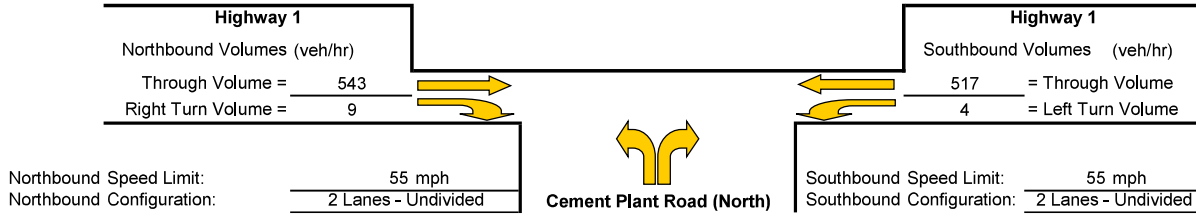
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Cement Plant Road (North)

Study Scenario: Weekend Midday - Future plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 552
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 552
If $AV < Va$ then warrant is met -

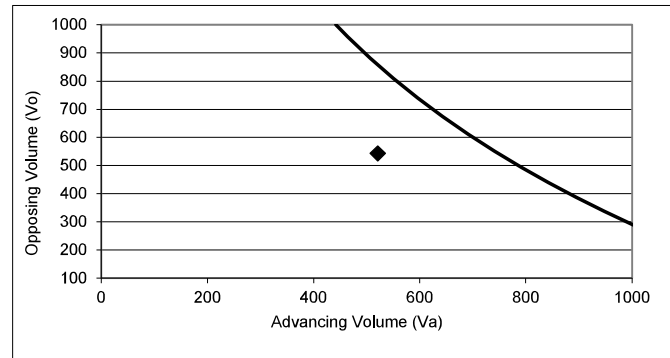
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 0.8 %

Advancing Volume Threshold AV 748 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

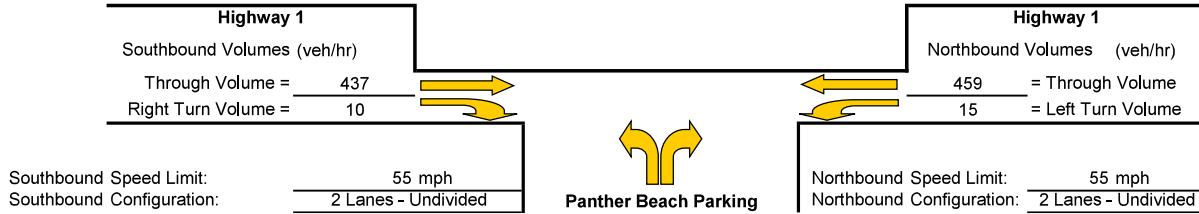
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Panther Beach Parking

Study Scenario: Weekend MIDDAY - Existing plus Alternative B

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
 Advancing Volume Va = 447
 If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
 Advancing Volume Va = 447
 If $AV < Va$ then warrant is met -

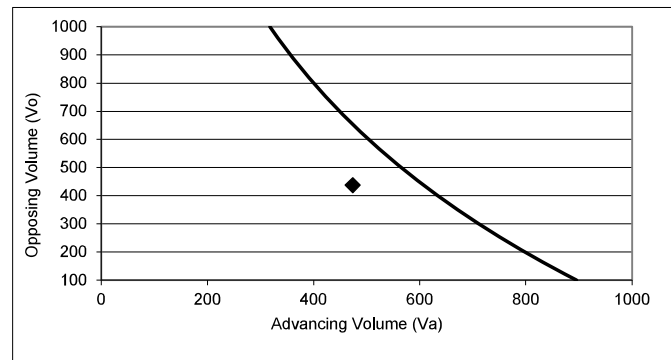
Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %Lt 3.2 %

Advancing Volume Threshold AV 608 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

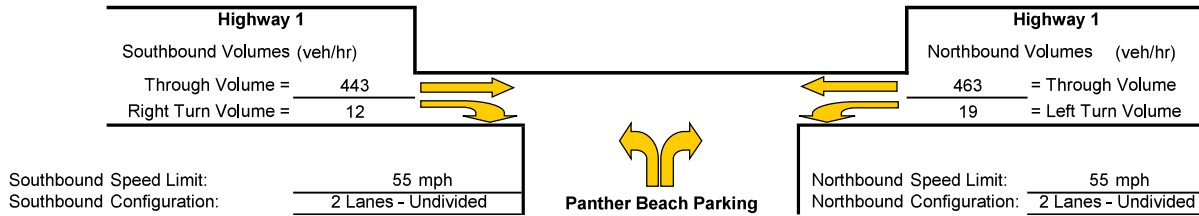
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Panther Beach Parking
Study Scenario: Weekend MIDDAY - Existing plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

- Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

- Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 455
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

- Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

- Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 455
If $AV < Va$ then warrant is met -

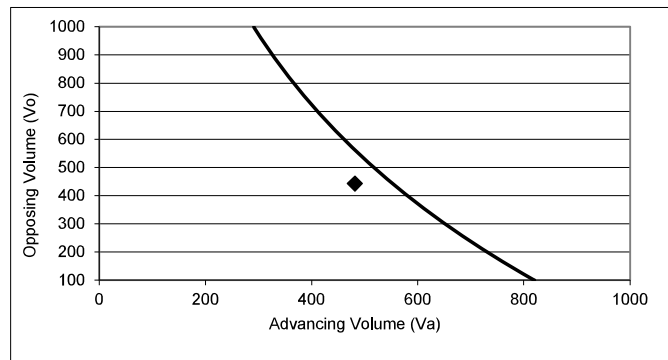
Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %Lt 3.9 %

Advancing Volume Threshold AV 552 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

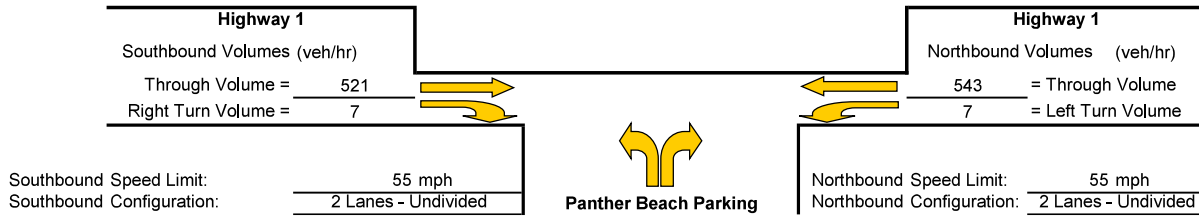
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Panther Beach Parking
Study Scenario: Weekend Midday - Future without Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 528
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 528
If $AV < Va$ then warrant is met -

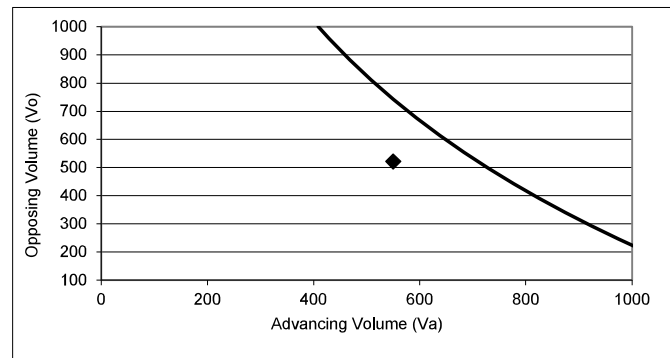
Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %Lt 1.3 %

Advancing Volume Threshold AV 710 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

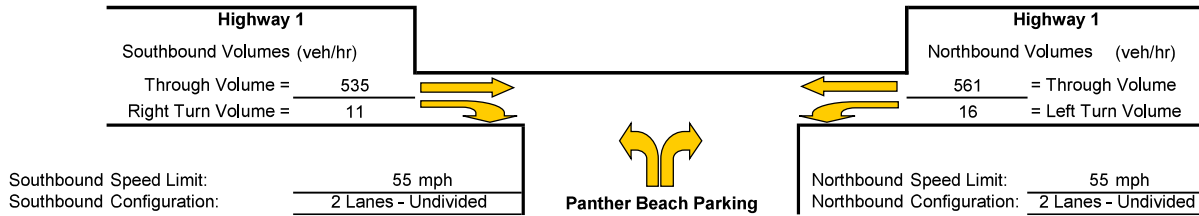
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroorty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Panther Beach Parking
Study Scenario: Weekend MIDDAY - Future plus Alternative B

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 546
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 546
If $AV < Va$ then warrant is met -

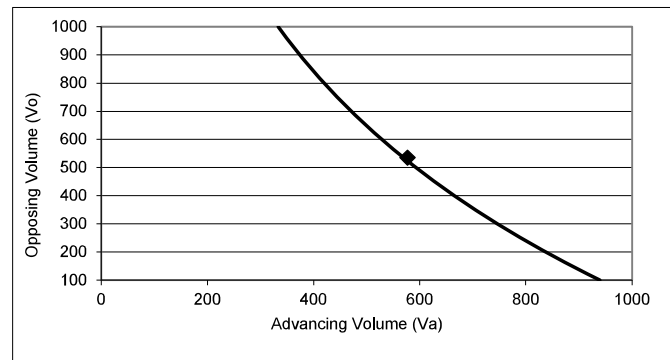
Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %Lt 2.8 %

Advancing Volume Threshold AV 569 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: YES

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

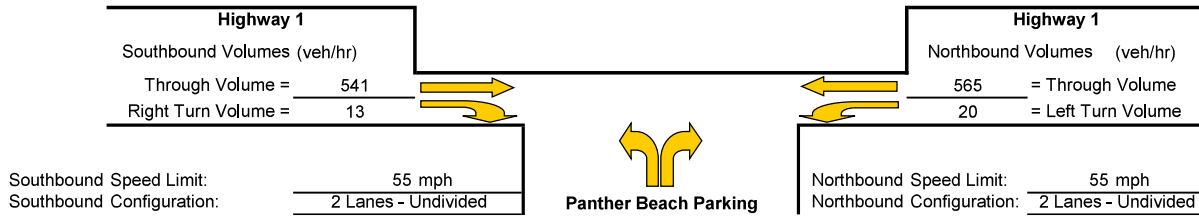
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Panther Beach Parking
Study Scenario: Weekend Midday - Future plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 554
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 554
If $AV < Va$ then warrant is met -

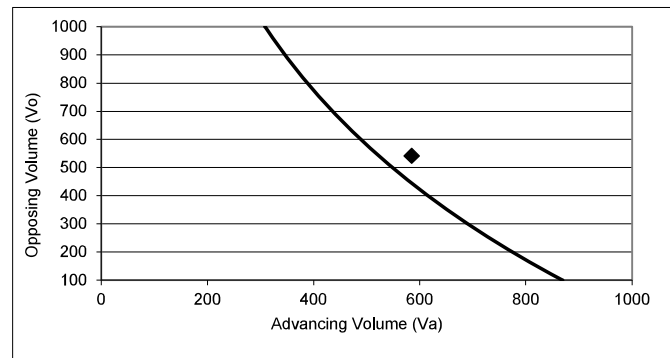
Right Turn Taper Warranted: NO

Northbound Left Turn Lane Warrants

Percentage Left Turns %Lt 3.4 %

Advancing Volume Threshold AV 523 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: YES

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

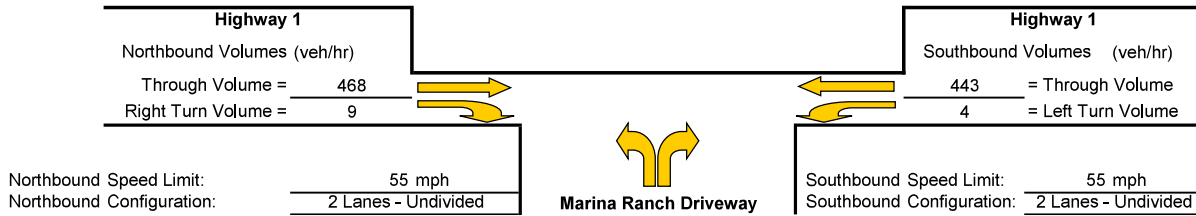
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Marina Ranch Driveway
Study Scenario: Weekend MIDDAY - Existing plus Alternative B

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 477
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 477
If $AV < Va$ then warrant is met -

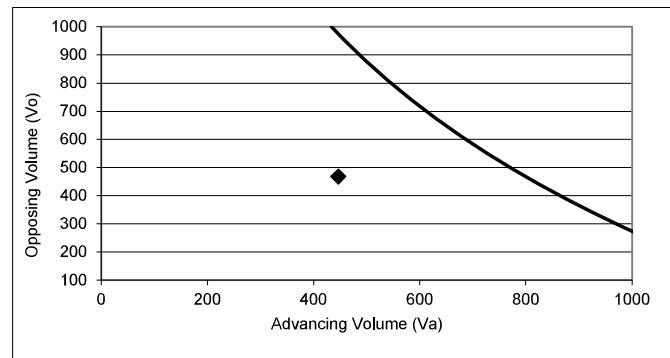
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 0.9 %

Advancing Volume Threshold AV 800 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

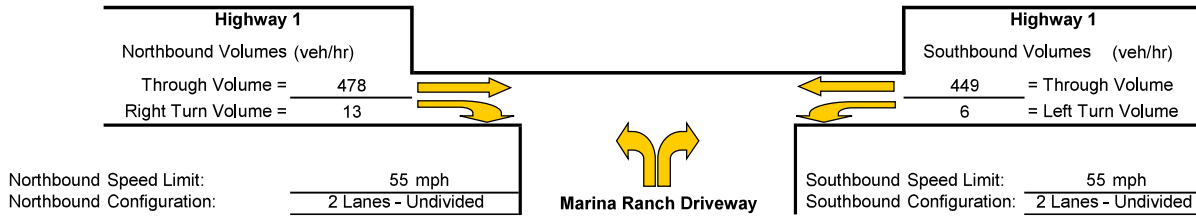
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroorty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Marina Ranch Driveway
Study Scenario: Weekend MIDDAY - Existing plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 491
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 491
If $AV < Va$ then warrant is met -

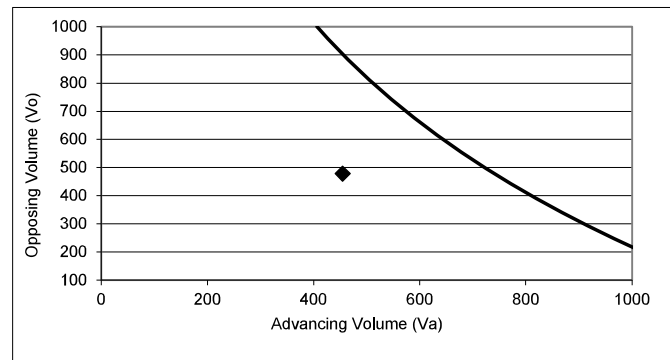
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 1.3 %

Advancing Volume Threshold AV 741 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

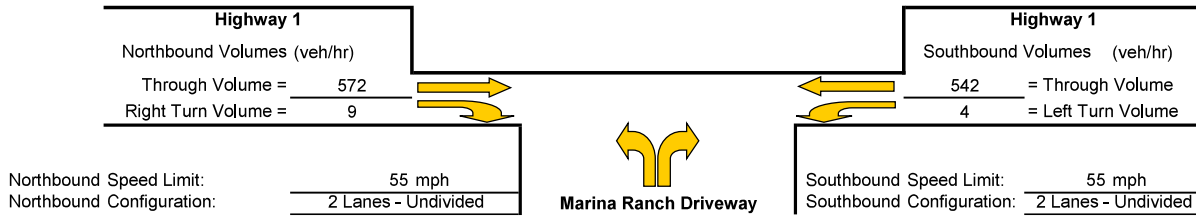
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroorty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Marina Ranch Driveway
Study Scenario: Weekend Midday - Future plus Alternative B

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 581
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 581
If $AV < Va$ then warrant is met -

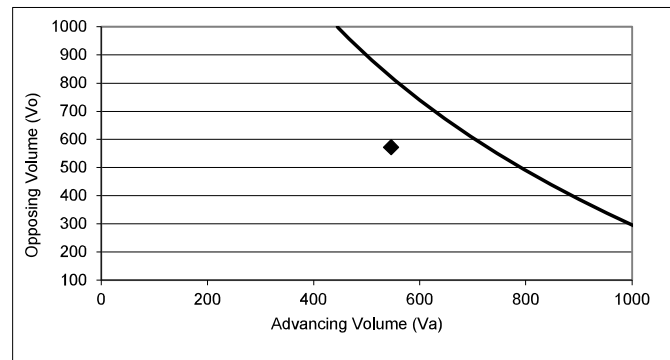
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 0.7 %

Advancing Volume Threshold AV 728 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

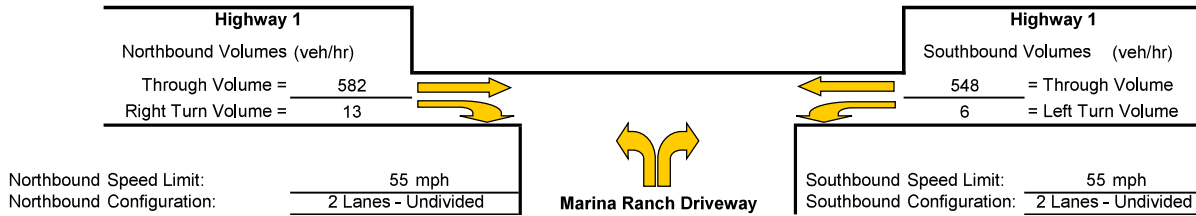
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Highway 1/Marina Ranch Driveway
Study Scenario: Weekend Midday - Future plus Alternative C

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -
Advancing Volume Va = 595
If $AV < Va$ then warrant is met -

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 595
If $AV < Va$ then warrant is met -

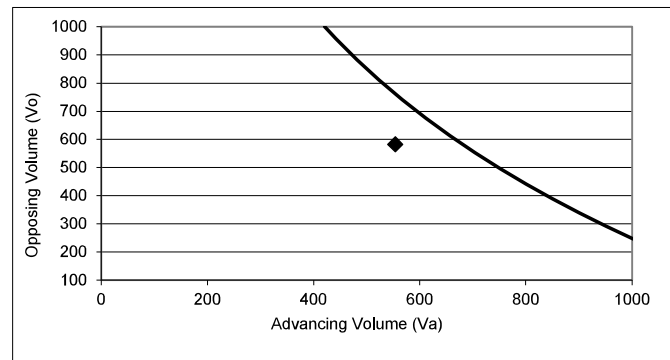
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %Lt 1.1 %

Advancing Volume Threshold AV 681 veh/hr

If $AV < Va$ then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroorty in 1991.

Warrant 3: Peak-Hour Volumes and Delay

Highway 1 & Bonny Doon Road
County of Santa Cruz

Project Name: Cotoni-Coast Dairies Project

Intersection: 1

	Major Street	Minor Street
Street Name	Highway 1	Bonny Doon Road
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	55	30

Population less than 10,000? Yes
Date of Count: Saturday, October 28, 2017
Scenario: Existing Weekend Midday plus Alternative A

Warrant 3 Met?: Met when either Condition A or B is met

Condition A: Met when conditions A1, A2, and A3 are met

Condition A1

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: N/A vehicle-hours

Condition A2

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 85 vph

Condition A3

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches

Total Entering Volume: 974 vph

Condition B

The plotted point falls above the curve

No

Not Met

Not Met

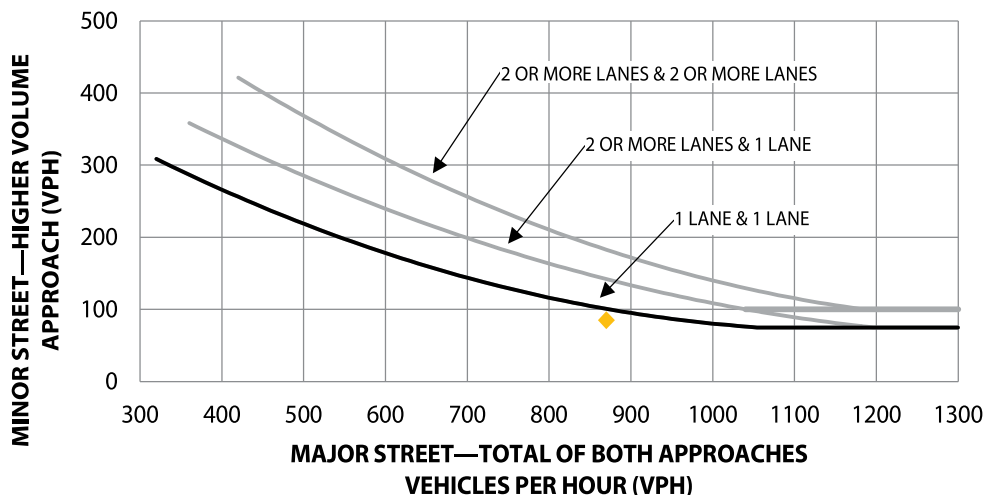
Not Met

Met

Not Met

Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION, OR ABOVE 40 MPH ON MAJOR STREET)



Warrant 3: Peak-Hour Volumes and Delay

Highway 1 & Bonny Doon Road
County of Santa Cruz

Project Name: Cotoni-Coast Dairies Project

Intersection: 1

	Major Street	Minor Street
Street Name	Highway 1	Bonny Doon Road
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	55	30

Population less than 10,000? Yes
Date of Count: Saturday, October 28, 2017
Scenario: Future Weekend Midday without Project Traffic

Warrant 3 Met?: Met when either Condition A or B is met

Condition A: Met when conditions A1, A2, and A3 are met

Condition A1

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: N/A vehicle-hours

Condition A2

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 85 vph

Condition A3

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches

Total Entering Volume: 1150 vph

Condition B

The plotted point falls above the curve

Yes

Not Met

Not Met

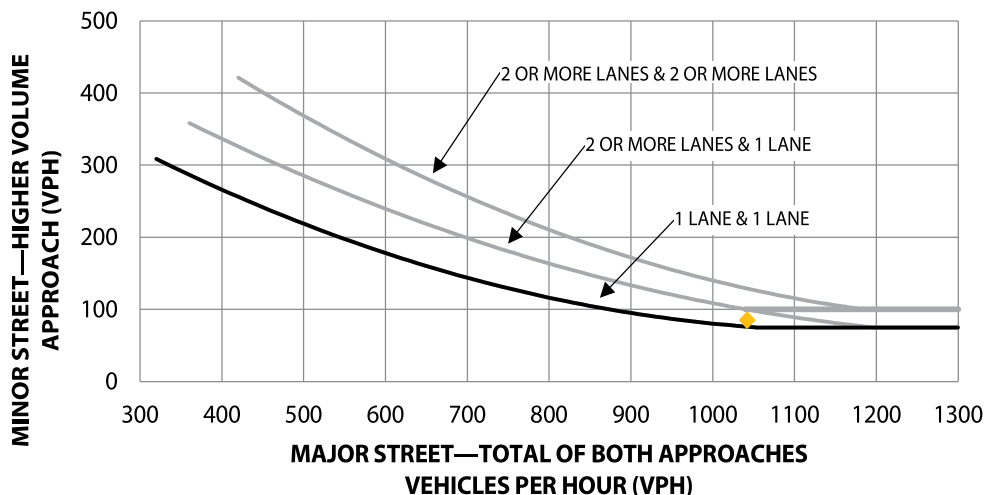
Not Met

Met

Met

Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION, OR ABOVE 40 MPH ON MAJOR STREET)



Warrant 3: Peak-Hour Volumes and Delay

Highway 1 & Bonny Doon Road
County of Santa Cruz

Project Name: Cotoni-Coast Dairies Project

Intersection: 1

	Major Street	Minor Street
Street Name	Highway 1	Bonny Doon Road
Direction	N-S	E-W
Number of Lanes	1	1
Approach Speed	55	30

Population less than 10,000? Yes
Date of Count: Saturday, October 28, 2017
Scenario: Future Weekend Midday plus Alternative A

Warrant 3 Met?: Met when either Condition A or B is met

Condition A: Met when conditions A1, A2, and A3 are met

Condition A1

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: N/A vehicle-hours

Condition A2

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 94 vph

Condition A3

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches

Total Entering Volume: 1184 vph

Condition B

The plotted point falls above the curve

Yes

Not Met

Not Met

Not Met

Met

Met

Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION, OR ABOVE 40 MPH ON MAJOR STREET)

